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Inland Transport Committee

Working Party on the Transport of Dangerous Goods

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Draft amendments to annexes A and B of ADR

At its ninety-fifth session, the Working Party on the Transport of Dangerous Goods requested the secretariat to prepare a consolidated list of all the amendments which it had adopted for entry into force on 1 January 2015 so that they could be made the subject of an official proposal in accordance with the procedure set out in article 14 of ADR, which, following usual practice, the Chairperson would be responsible for transmitting to the depositary through his Government. The notification would have to be issued no later than 1 July 2014, with a reference to 1 January 2015 as the scheduled date of entry into force (see ECE/TRANS/WP.15/221, paragraph 68).

This document contains the requested consolidated list of amendments adopted by the Working Party at its ninety-second, ninety-third, ninety-forth and ninety-fifth sessions (see ECE/TRANS/WP.15/215, annex II, ECE/TRANS/WP.15/217, annex I, ECE/TRANS/WP.15/219, annex II and ECE/TRANS/WP.15/221, annex I).

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Part 1

Chapter 1.1

1.1.3.1 (c) In the first sentence, after "per packaging", insert ", including intermediate bulk containers (IBCs) and large packagings,".

1.1.3.1 In the Note, replace "see 1.7.1.4" by "see also 1.7.1.4".

1.1.3.2 (c) Add the following new Note at the end:

"***NOTE:*** *This exemption does not apply to lamps. For lamps see 1.1.3.10.*".

1.1.3.2 (h) Delete 1.1.3.2 (h) and insert "(h) *(Deleted)*".

1.1.3.3 (a) At the end of the first sentence add the following: "used or intended for use during carriage" after "or for the operation of any of its equipment".

1.1.3.4 In the Note, replace "see 1.7.1.4" by "see also 1.7.1.4".

1.1.3.6.2, first indent The amendment does not apply to the English text.

1.1.3.6.2 In the sixth indent, insert "S5," after "S4,".

1.1.3.6.3 Amend the last indent to read as follows:

"– For liquids, the total quantity of dangerous goods contained in litres;

– For compressed gases and chemicals under pressure, the water capacity of the receptacle in litres.".

1.1.3.6.5 Insert "1.1.3.1 (a), (b) and (d) to (f)," before "1.1.3.2". After "1.1.3.5" insert ", 1.1.3.7 and 1.1.3.9".

1.1.3 Insert a new sub-section to read as follows:

"**1.1.3.10** ***Exemptions related to the carriage of lamps containing dangerous goods***

The following lamps are not subject to ADR provided that they do not contain radioactive material and do not contain mercury in quantities above those specified in special provision 366 of Chapter 3.3:

(a) Lamps that are collected directly from individuals and households when carried to a collection or recycling facility;

NOTE: *This also includes lamps brought by individuals to a first collection point, and then carried to another collection point, intermediate processing or recycling facility.*

(b) Lamps each containing not more than 1 g of dangerous goods and packaged so that there is not more than 30 g of dangerous goods per package, provided that:

(i) the lamps are manufactured according to a certified quality management system;

NOTE: *ISO 9001:2008 may be used for this purpose.*

and

(ii) each lamp is either individually packed in inner packagings, separated by dividers, or surrounded with cushioning material to protect the lamps and packed into strong outer packagings meeting the general provisions of 4.1.1.1 and capable of passing a 1.2 m drop test;

(c) Used, damaged or defective lamps each containing not more than 1 g of dangerous goods with not more than 30 g of dangerous goods per package when carried from a collection or recycling facility. The lamps shall be packed in strong outer packagings sufficient for preventing release of the contents under normal conditions of carriage meeting the general provisions of 4.1.1.1 and that are capable of passing a drop test of not less than 1.2 m;

(d) Lamps containing only gases of Groups A and O (according to 2.2.2.1) provided they are packaged so that the projectile effects of any rupture of the lamp will be contained within the package.

NOTE: *Lamps containing radioactive material are addressed in 2.2.7.2.2.2 (b).".*

1.1.4.2.1 In the first sentence, replace "and tank-containers" by ", tank-containers and MEGCs". In the first sentence of paragraph (c), replace "or tank-containers" by ", tank-containers or MEGCs". In the third sentence of paragraph (c), replace "and tank-containers" by ", tank-containers and MEGCs".

1.1.4.2.2 Replace "or tank-containers" by ", tank-containers or MEGCs".

1.1.5 Add the following last sentence: "The requirements of the standard that do not conflict with ADR shall be applied as specified, including the requirements of any other standard, or part of a standard, referenced within that standard as normative.".

Chapter 1.2

1.2.1 In the definitions, whenever the term "for the carriage of Class 7 material" is used, replace it by "for the carriage of radioactive material".

1.2.1 Amend the definitions hereafter as follows:

Approval Replace "6.4.22.6" by "6.4.22.8".

Bulk container Add the following new Note at the end:

*"**NOTE:** This definition only applies to bulk containers meeting the requirements of Chapter 6.11.".*

Carriage in bulk Replace "in vehicles or containers" by "in vehicles, containers or bulk containers".

Closure: The amendment to the definition of "fermeture" in the French version does not apply to the English text.

Combination packaging Amend the Note to read as follows:

*"**NOTE:** The term "inner packaging" used for combination packagings shall not be confused with the term "inner receptacle" used for composite packagings."*

Composite packaging (plastics material) Amend the definition and the related NOTE to read as follows:

"*Composite packaging*" means a packaging consisting of an outer packaging and an inner receptacle so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled it remains thereafter an integrated single unit; it is filled, stored, carried and emptied as such;

NOTE: *The term "inner receptacle" used for composite packagings shall not be confused with the term "inner packaging" used for combination packagings. For example, the inner of a 6HA1 composite packaging (plastics material) is such an inner receptacle since it is normally not designed to perform a containment function without its outer packaging and is not therefore an inner packaging.*

Where a material is mentioned in brackets after the term "composite packaging", it refers to the inner receptacle.".

Composite packaging (glass, porcelain or stoneware) Delete the definition and the related NOTE.

Container: In the definition of "Small container", delete "either any overall outer dimension (length, width or height) less than 1.5 m, or".

Design: In the first sentence, insert "fissile material excepted under 2.2.7.2.3.5 (f)," after "the description of".

Exclusive use: Replace "and unloading is carried" by "and unloading and shipment are carried" and insert ", where so required by ADR" after "consignee".

Full load: In the note at the end, replace "Class 7" by "radioactive material".

GHS: Replace "fourth" by "fifth" and "ST/SG/AC.10/30/Rev.4" by "ST/SG/AC.10/30/Rev.5".

Manual of Tests and Criteria: Amend the text in parentheses to read "ST/SG/AC.10/11/Rev.5 as amended by documents ST/SG/AC.10/11/Rev.5/Amend.1 and ST/SG/AC.10/11/Rev.5/Amend.2".

Nominal capacity of the receptacle : Delete the definition.

Overpack: Replace "Class 7" by "radioactive material".

Packaging: Replace "Composite packaging (plastics material)", "Composite packaging (glass, porcelain or stoneware)" by "Composite packaging".

Radiation level: Amend the end of the definition to read: "millisieverts per hour or microsieverts per hour;".

Service equipment: Amend the end of sub-paragraph (a) to read as follows:

"…heating, heat insulating and additive devices and measuring instruments;".

Shell: Amend to read as follows:

""*Shell*" (for tanks), means the part of the tank which retains the substance intended for carriage, including openings and their closures, but does not include service equipment or external structural equipment;

NOTE: *For portable tanks, see Chapter 6.7.*".

Small receptacle containing gas (gas cartridge) Replace "meeting the relevant requirements of 6.2.6" by "having a water capacity not exceeding 1000 ml for receptacles made of metal and not exceeding 500 ml for receptacles made of synthetic material or glass,".

UN Model Regulations: Replace "seventeenth" by "eighteenth" and "(ST/SG/AC.10/1/Rev.17)" by "(ST/SG/AC.10/1/Rev.18)".

1.2.1 Add the following new definitions in alphabetical order:

""*Large salvage packaging*" means a special packaging which

(a) is designed for mechanical handling; and

(b) exceeds 400 kg net mass or 450 litres capacity but has a volume of not more than 3 m^3;

into which damaged, defective or leaking dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of carriage for recovery or disposal;".

"*"Management system"*, for the carriage of radioactive material, means a set of interrelated or interacting elements (system) for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner;".

"*"Neutron radiation detector"* means a device that detects neutron radiation. In such a device, a gas may be contained in a hermetically sealed electron tube transducer that converts neutron radiation into a measureable electric signal;".

"*"Radiation detection system"* means an apparatus that contains radiation detectors as components;".

Chapter 1.6

1.6.1.1 Amend to read as follows:

"1.6.1.1 Unless otherwise provided, the substances and articles of ADR may be carried until 30 June 2015 in accordance with the requirements of ADR applicable up to 31 December 2014.".

1.6.1.10 Delete 1.6.1.10 and insert "1.6.1.10 *(Deleted)*".

1.6.1.15 At the end, add "IBCs manufactured, remanufactured or repaired between 1 January 2011 and 31 December 2016 and marked with the maximum permitted stacking load in accordance with 6.5.2.2.2 in force up to 31 December 2014 may continue to be used.".

1.6.1.16 Delete the transitional measure and related footnote 1. Insert "1.6.1.16 *(Deleted)*". Renumber the footnotes in Chapter 1.6 accordingly.

1.6.1.19 Delete 1.6.1.19 and insert "1.6.1.19 *(Deleted)*"

1.6.1.24 Delete 1.6.1.24 and insert "1.6.1.24 *(Deleted)*".

1.6.1.25 The amendment does not apply to the English text.

1.6.1.26 At the end, add "Large packagings manufactured or remanufactured between 1 January 2011 and 31 December 2016 and marked with the maximum permitted stacking load in accordance with 6.6.3.3 in force up to 31 December 2014 may continue to be used.".

1.6.1 Add the following new transitional measures:

"1.6.1.28 As an exception to the provisions of 1.6.1.1, accreditations in accordance with EN ISO/IEC 17020:2004 for the purposes of 1.8.6.8, 6.2.2.11, 6.2.3.6.1 and special provisions TA4 and TT9 of 6.8.4 shall not be recognised after 28 February 2015.".

"1.6.1.29 Lithium cells and batteries manufactured according to a type meeting the requirements of sub-section 38.3 of the Manual of Tests and Criteria, Revision 3, Amendment 1 or any subsequent revision and amendment applicable at the date of the type testing may continue to be carried, unless otherwise provided in ADR.

Lithium cells and batteries manufactured before 1 July 2003 meeting the requirements of the Manual of Tests and Criteria, Revision 3, may continue to be carried if all other applicable requirements are fulfilled.".

"1.6.1.30 Labels, placards and markings which meet the requirements of 3.4.7, 3.4.8, 3.5.4.2, 5.2.1.8.3, 5.2.2.2.1.1, 5.3.1.7.1, 5.3.3, 5.3.6, 5.5.2.3.2 and 5.5.3.6.2 applicable up to 31 December 2014 may continue to be used until 31 December 2016.".

"1.6.1.31 Overpacks marked with the word "OVERPACK" in accordance with the provisions of ADR applicable up to 31 December 2014 and which do not conform to the requirements of 5.1.2.1 (a) regarding the size of the letters applicable as from 1 January 2015 may continue to be used until 31 December 2015.".

"1.6.1.32 Salvage packagings and salvage pressure receptacles marked with the word "SALVAGE" in accordance with the provisions of ADR applicable up to 31 December 2014 and which do not conform to the requirements of 5.2.1.3 regarding the size of the letters applicable as from 1 January 2015 may continue to be used until 31 December 2015.".

"1.6.1.33 Electric double layer capacitors of UN No. 3499, manufactured before 1 January 2014, need not be marked with the energy storage capacity in Wh as required by sub-paragraph (e) of special provision 361 of Chapter 3.3.".

"1.6.1.34 Asymmetric capacitors of UN No. 3508, manufactured before 1 January 2016, need not be marked with the energy storage capacity in Wh as required by sub-paragraph (c) of special provision 372 of Chapter 3.3.".

"1.6.1.35 The instructions in writing in accordance with the requirements of ADR applicable up to 31 December 2014, but which do not however conform to the requirements of 5.4.3 applicable as from 1 January 2015, may continue to be used until 30 June 2017.".

"1.6.1.36 Driver training certificates issued before 1 January 2014 that do not comply with the requirements under 8.2.2.8.5 applicable from 1 January 2013 in respect of the sequence used for the presentation of dates under numbers 4. and 8., the colour (white with black lettering), and the use of the numbers 9. and 10. on the back of the certificate to introduce the corresponding lists of classes for which the certificate is valid, may continue to be used until their date of expiry.".

1.6.2 Add the following new transitional measures:

"1.6.2.13 Bundles of cylinders manufactured before 1 July 2013 which are not marked in accordance with 6.2.3.9.7.2 and 6.2.3.9.7.3 may be used until the next periodic inspection and test after 1 July 2015.".

"1.6.2.14 Cylinders constructed before 1 January 2016 in accordance with 6.2.3 and a specification approved by the competent authorities of the countries of transport and use, but not in accordance with ISO 11513:2011 or ISO 9809-1:2010 as required in 4.1.4.1, packing instruction P208 (1), may be used for the carriage of adsorbed gases provided the general packing requirements of 4.1.6.1 are met.".

1.6.3 Add the following new transitional measure:

"1.6.3.44 Fixed tanks (tank-vehicles) and demountable tanks intended for the carriage of UN Nos. 1202, 1203, 1223, 3475 and aviation fuel classified under UN Nos. 1268 or 1863, equipped with additive devices designed and constructed before 1 July 2015 in accordance with the provisions of national law, but which do not, however, conform to the construction and approval requirements of special provision 664 of Chapter 3.3 applicable as from 1 January 2015, may continue to be used with the approval of the competent authorities in the countries of use.".

1.6.5.4 Amend to read as follows:

"1.6.5.4 As regards the construction of EX/II, EX/III, FL, OX and AT vehicles, the requirements of Part 9 in force up to 31 December 2014 may be applied until 31 March 2016.".

1.6.6.1 Amend the text after the heading to read as follows:

"Packages not requiring competent authority approval of design (excepted packages, Type IP-1, Type IP-2, Type IP-3 and Type A packages) shall meet the requirements of ADR in full, except that packages that meet the requirements of the 1985 or 1985 (as amended 1990) Editions of IAEA Regulations for the Safe Transport of Radioactive Material (IAEA Safety Series No.6):

(a) May continue in carriage provided that they were prepared for carriage prior to 31 December 2003, and subject to the requirements of 1.6.6.3, if applicable;

(b) May continue to be used provided that:

(i) They were not designed to contain uranium hexafluoride;

(ii) The applicable requirements of 1.7.3 are applied;

(iii) The activity limits and classification in 2.2.7 are applied;

(iv) The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied;

(v) The packaging was not manufactured or modified after 31 December 2003.".

1.6.6.2.1 Amend to read as follows:

"1.6.6.2.1 Packages requiring competent authority approval of the design shall meet the requirements of ADR in full unless the following conditions are met:

(a) The packagings were manufactured to a package design approved by the competent authority under the provisions of the 1973 or 1973 (as amended) or the 1985 or 1985 (as amended 1990) Editions of IAEA Safety Series No.6;

(b) The package design is subject to multilateral approval;

(c) The applicable requirements of 1.7.3 are applied;

(d) The activity limits and classification in 2.2.7 are applied;

(e) The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied;

(f) *(Reserved)*

(g) For packages that meet the requirements of the 1973 or 1973 (as amended) Editions of IAEA Safety Series No. 6:

(i) The packages retain sufficient shielding to ensure that the radiation level at 1 m from the surface of the package would not exceed 10 mSv/h in the accident conditions of carriage defined in the 1973 Revised or 1973 Revised (as amended) Editions of IAEA Safety Series No.6 with the maximum radioactive contents which the package is authorized to contain;

(ii) The packages do not utilize continuous venting;

(iii) A serial number in accordance with the provision of 5.2.1.7.5 is assigned to and marked on the outside of each packaging.".

1.6.6.2.2 Amend to read as follows:

"1.6.6.2.2 No new manufacture of packagings to a package design meeting the provisions of the 1973, 1973 (as amended), 1985, and 1985 (as amended 1990) Editions of IAEA Safety Series No.6 shall be permitted to commence.".

1.6.6.3 Insert a new sub-section to read as follows:

"1.6.6.3 *Packages excepted from the requirements for fissile materials under the 2011 and 2013 editions of ADR (2009 Edition of IAEA Safety Standard Series No.TS-R-1)*

Packages containing fissile material that is excepted from classification as "FISSILE" according to 2.2.7.2.3.5 (a) (i) or (iii) of the 2011 and 2013 editions of ADR (paras. 417 (a) (i) or (iii) of the 2009 Edition of IAEA Regulations for the Safe Transport of Radioactive Material) prepared for carriage before 31 December 2014 may continue in carriage and may continue to be classified as non-fissile or fissile-excepted except that the consignment limits in Table 2.2.7.2.3.5 of these editions shall apply to the vehicle. The consignment shall be carried under exclusive use.".

Current paragraph 1.6.6.3 becomes new 1.6.6.4

1.6.6.4 (former 1.6.6.3) In the first sentence, replace "programme of quality assurance" with "management system". Replace the last sentence with the following: "No new manufacture of such special form radioactive material shall be permitted to commence.".

Chapter 1.7

1.7 Replace the title by "GENERAL PROVISIONS CONCERNING RADIOACTIVE MATERIAL".

1.7.1.1 Amend the second and third sentences to read:

"These standards are based on the IAEA Regulations for the Safe Transport of Radioactive material, 2012 Edition, IAEA Safety Standards Series No. SSR–6, IAEA, Vienna (2012). Explanatory material can be found in "Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition)", IAEA Safety Standards Series No. SSG-26, IAEA, Vienna (2014).".

1.7.1.2 In the second sentence of the last paragraph replace "imposing requirements" by "imposing conditions".

1.7.1.4 Amend the introductory sentence to read: "The provisions laid down in ADR do not apply to any of the following:".

1.7.1.4 Insert a new sub-paragraph (d) to read as follows and rename current sub-paragraphs (d) to (f) accordingly:

"(d) Radioactive material in or on a person who is to be transported for medical treatment because the person has been subject to accidental or deliberate intake of radioactive material or to contamination;".

Amend sub-paragraph (f) (former (e)) to read as follows:

"(f) Natural material and ores containing naturally occurring radionuclides (which may have been processed), provided the activity concentration of the material does not exceed 10 times the values specified in Table 2.2.7.2.2.1, or calculated in accordance with 2.2.7.2.2.2 (a) and 2.2.7.2.2.3 to 2.2.7.2.2.6. For natural materials and ores containing naturally occurring radionuclides that are not in secular equilibrium the calculation of the activity concentration shall be performed in accordance with 2.2.7.2.2.4;".

1.7.1.5.1 Amend to read as follows:

"1.7.1.5.1 Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles or empty packagings as specified in 2.2.7.2.4.1 shall be subject only to the following provisions of Parts 5 to 7:

(a) The applicable provisions specified in 5.1.2.1, 5.1.3.2, 5.1.5.2.2, 5.1.5.2.3, 5.1.5.4, 5.2.1.9, 7.5.11 CV33 (3.1), (5.1) to (5.4) and (6); and

(b) The requirements for excepted packages specified in 6.4.4.

except when the radioactive material possesses other hazardous properties and has to be classified in a class other than Class 7 in accordance with special provision 290 or 369 of Chapter 3.3, where the provisions listed in (a) and (b) above apply only as relevant and in addition to those relating to the main class.".

1.7.1.5.2 Insert a new second sentence to read as follows:

"If the excepted package contains fissile material, one of the fissile exceptions provided by 2.2.7.2.3.5 shall apply and the requirements of 7.5.11 CV33 (4.3) shall be met.".

1.7.2.2 In the second sentence, delete the comma after "persons exposed".

1.7.2.4 Amend the end of the introductory sentence to read "that the effective dose either:" and insert "or" at the end of sub-paragraph (a).

1.7.3 Amend to read as follows:

"**1.7.3 Management system**

1.7.3.1 A management system based on international, national or other standards acceptable to the competent authority shall be established and implemented for all activities within the scope of ADR, as identified in 1.7.1.3, to ensure compliance with the relevant provisions of ADR. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared:

(a) To provide facilities for inspection during manufacture and use; and

(b) To demonstrate compliance with ADR to the competent authority.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the management system.".

1.7.4.2 Replace "Class 7" by "radioactive material", twice.

1.7.6 The amendment does not apply to the English text.

1.7.6.1 In the introductory sentence, delete "a" before "non-compliance".

1.7.6.1 In (a) amend the introductory sentence to read:

"The consignor, consignee, carrier and any organization involved during carriage who may be affected, as appropriate, shall be informed of the non-compliance by:".

1.7.6.1 In (b) (iv), delete "and" at the end of the sentence.

The other amendments to 1.7.6.1 do not apply to the English text.

Chapter 1.8

1.8.5.3 Replace "Class 7 material" by "radioactive material".

1.8.6.8 In the last and last but one sub-paragraph, replace "EN ISO/IEC 17020:2004" by "EN ISO/IEC 17020:2012 (except clause 8.1.3)".

Chapter 1.9

1.9.5.2.2 For "Tunnel category A", replace "transport" by "carriage".

1.9.5.2.2 For "Tunnel category B", insert "the carriage of" before "dangerous goods".

1.9.5.2.2 For "Tunnel category C", insert "the carriage of" before "dangerous goods".

1.9.5.2.2 For "Tunnel category D", insert "the carriage of" before "dangerous goods".

1.9.5.2.2 For "Tunnel category E", insert "the carriage of" before "all dangerous goods".

1.9.5.3.6 Amend to read as follows:

"Tunnel restrictions shall apply to transport units for which an orange-coloured plate marking in accordance with 5.3.2 is required, except for the carriage of dangerous goods for which '(-)' is marked in Column (15) of Table A of Chapter 3.2. For the dangerous goods assigned to UN Nos. 2919 and 3331, restrictions to the passage through tunnels may, however, be part of the special arrangement approved by the competent authority(ies) on the basis of 1.7.4.2. For tunnels of category E, they shall apply also to transport units for which a marking in accordance with 3.4.13 is required or carrying containers for which a marking in accordance with 3.4.13 is required.

Tunnel restrictions shall not apply when dangerous goods are carried in accordance with 1.1.3, except when transport units carrying such goods are marked in accordance with 3.4.13 subject to 3.4.14[3].".

The text of footnote 3 remains unchanged.

Chapter 1.10

1.10.4 The amendment does not apply to the English text.

Chapter 2.1

2.1.1.3 Add the following new paragraph at the end:

"Articles are not assigned to packing groups. For packing purposes any requirement for a specific packaging performance level is set out in the applicable packing instruction.".

2.1.3.5.3 (a) Replace "for which special provision 290 of Chapter 3.3 applies" by "for which, except for UN 3507 URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, special provision 290 of Chapter 3.3 applies".

2.1.5 Add a new paragraph to read as follows:

"**2.1.5 Classification of packagings, discarded, empty, uncleaned**

Empty uncleaned packagings, large packagings or IBCs, or parts thereof, carried for disposal, recycling or recovery of their material, other than reconditioning, repair, routine maintenance, remanufacturing or reuse, may be assigned to UN 3509 if they meet the requirements for this entry.".

Chapter 2.2

Amend Note 2 in 2.2.1.1.7.5 to read as follows:

"***NOTE 2***: *"Flash composition" in this table refers to pyrotechnic substances in powder form or as pyrotechnic units as presented in the firework that are used to produce an aural effect or used as a bursting charge, or propellant charge unless the time taken for the pressure rise is demonstrated to be more than 6 ms for 0.5 g of pyrotechnic substance in the HSL Flash Composition Test in Appendix 7 of the Manual of Tests and Criteria.*".

2.2.1.4 Delete the entry for "AIR BAG INFLATORS or AIR BAG MODULES or SEAT BELT PRETENSIONERS: UN No. 0503". Add the following new entry:

"SAFETY DEVICES, PYROTECHNIC: UN No. 0503

Articles which contain pyrotechnic substances or dangerous goods of other classes and are used in vehicles, vessels or aircraft to enhance safety to persons. Examples are: air bag inflators, air bag modules, seat-belt pretensioners and pyromechanical devices. These pyromechanical devices are assembled components for tasks such as but not limited to separation, locking, or occupant restraint.".

2.2.2.1.2 Add a new indent 9. to read as follows:

"9. *Adsorbed gas:* a gas which when packaged for carriage is adsorbed onto a solid porous material resulting in an internal receptacle pressure of less than 101.3 kPa at 20 °C and less than 300 kPa at 50 °C.".

2.2.2.3 Insert the following new table at the end:

Adsorbed gases		
Classification code	**UN No.**	**Name of the substance or article**
9A	3511	ADSORBED GAS, N.O.S.
9O	3513	ADSORBED GAS, OXIDIZING, N.O.S.
9F	3510	ADSORBED GAS, FLAMMABLE, N.O.S.
9T	3512	ADSORBED GAS, TOXIC, N.O.S.
9TF	3514	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.
9TC	3516	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.
9TO	3515	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.
9TFC	3517	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.
9TOC	3518	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.

2.2.3.1.1 Amend NOTE 3 to read as follows:

"NOTE 3: *Flammable liquids which are highly toxic by inhalation, as defined in 2.2.61.1.4 to 2.2.61.1.9, and toxic substances having a flash-point of 23 °C or above are substances of Class 6.1 (see 2.2.61.1). Liquids which are highly toxic by inhalation are indicated as "toxic by inhalation" in their proper shipping name in Column (2) or by special provision 354 in Column (6) of Table A of Chapter 3.2.".*

2.2.3.1.5 Amend to read as follows:

"2.2.3.1.5 Viscous liquids which:

- have a flash-point of 23 °C or above and less than or equal to 60 °C;
- are not toxic, corrosive or environmentally hazardous;
- contain not more than 20% nitrocellulose provided the nitrocellulose contains not more than 12.6% nitrogen by dry mass; and
- are packed in receptacles of not more than 450 litre capacity;

are not subject to ADR, if:

(a) in the solvent separation test (see *Manual of Tests and Criteria*, Part III, sub-section 32.5.1), the height of the separated layer of solvent is less than 3% of the total height; and

(b) the flowtime in the viscosity test (see *Manual of Tests and Criteria*, Part III, sub-section 32.4.3), with a jet diameter of 6 mm is equal to or greater than:

(i) 60 seconds; or

(ii) 40 seconds if the viscous liquid contains not more than 60% of Class 3 substances.".

2.2.43.1.3 In the English text, replace "light bulbs" by "lamps".

2.2.51.1.6 and 2.2.51.1.7 Amend to read as follows:

"***Oxidizing solids***

Classification

2.2.51.1.6 When oxidizing solid substances not mentioned by name in Table A of Chapter 3.2 are assigned to one of the entries listed in 2.2.51.3 on the basis of the test procedure in accordance with the Manual of Tests and Criteria, Part III, sub-section 34.4.1 (test O.1) or alternatively, sub section 34.4.3 (test O.3), the following criteria shall apply:

(a) In the test O.1, a solid substance shall be assigned to Class 5.1 if, in the 4:1 or the 1:1 sample-to-cellulose ratio (by mass) tested, it ignites or burns or exhibits mean burning times equal to or less than that of a 3:7 mixture (by mass) of potassium bromate and cellulose; or

(b) In the test O.3, a solid substance shall be assigned to Class 5.1 if, in the 4:1 or the 1:1 sample-to-cellulose ratio (by mass) tested, it exhibits a mean burning rate equal to or greater than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose.

Assignment of packing groups

2.2.51.1.7 Oxidizing solids classified under the various entries in Table A of Chapter 3.2 shall be assigned to packing groups I, II or III on the basis of test procedures of the Manual of Tests and Criteria, Part III, sub-section 34.4.1 (test O.1) or sub-section 34.4.3 (test O.3), in accordance with the following criteria:

(a) Test O.1:

(i) Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose;

(ii) Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 2:3 mixture (by mass) of potassium bromate and cellulose and the criteria for packing group I are not met;

(iii) Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose and the criteria for packing groups I and II are not met;

(b) Test O.3:

(i) Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate greater than the mean burning rate of a 3:1 mixture (by mass) of calcium peroxide and cellulose;

(ii) Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate equal to or greater than the mean burning rate of a 1:1 mixture (by mass) of calcium peroxide and cellulose, and the criteria for packing group I are not met;

(iii) Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate equal to or greater than the mean burning rate of a

1:2 mixture (by mass) of calcium peroxide and cellulose, and the criteria for packing groups I and II are not met.".

2.2.61.3 Amend the text of footnote (j) to read as follows:

"(j) Highly toxic and toxic flammable liquids having a flash-point below 23 °C are substances of Class 3 except those which are highly toxic by inhalation, as defined in 2.2.61.1.4 to 2.2.61.1.9. Liquids which are highly toxic by inhalation are indicated as "toxic by inhalation" in their proper shipping name in Column (2) or by special provision 354 in Column (6) of Table A of Chapter 3.2.".

2.2.62.1.5.5 Amend to read as follows:

"2.2.62.1.5.5 Dried blood spots, collected by applying a drop of blood onto absorbent material, are not subject to ADR.".

2.2.62.1.5 Insert two new paragraphs 2.2.62.1.5.6 and 2.2.62.1.5.7 to read as follows and renumber existing paragraphs accordingly:

"2.2.62.1.5.6 Faecal occult blood screening samples are not subject to ADR.

2.2.62.1.5.7 Blood or blood components which have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation as well as samples drawn in connection with such purposes are not subject to ADR.".

The first amendment to 2.2.7 does not apply to the English text.

2.2.7.1.3 Amend the definitions hereafter as follows:

Fissile nuclides: Amend the end of the introductory text before (a) to read: "of fissile material are the following:".

In (a), delete "and". In (b), insert ";" at the end.

Insert the following new sub-paragraphs and text:

"(c) Material with fissile nuclides less than a total of 0.25 g;

(d) Any combination of (a), (b) and/or (c).

These exclusions are only valid if there is no other material with fissile nuclides in the package or in the consignment if shipped unpackaged.".

Surface contaminated object: At the end, replace "surfaces" by "surface".

2.2.7.2.1.1 Amend the sentence before the table to read as follows: "Radioactive material shall be assigned to one of the UN numbers specified in Table 2.2.7.2.1.1, in accordance with 2.2.7.2.4 and 2.2.7.2.5, taking into account the material characteristics determined in 2.2.7.2.3.".

Table 2.2.7.2.1.1 Add a new heading row to read:

UN No.	Proper shipping name and description[a]

Table 2.2.7.2.1.1 For UN Nos. 2912, 3321, 3322, 2913, 2915, 3332, 2916, 2917, 3323, 2919 and 2978, insert a reference to a new note "b" after "fissile-excepted".

Table 2.2.7.2.1.1 Under the headings "Excepted packages" and "Uranium hexafluoride" add the following new entry:

"UN 3507 URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted[b,c]".

Table 2.2.7.2.1.1 The amendments to the name for UN Nos. 2909, 2910 and 2911 do not apply to the English text.

Table 2.2.7.2.1.1 Add the following table notes "a", "b" and "c" after the table:

"[a] *The proper shipping name is found in the column "proper shipping name and description" and is restricted to that part shown in capital letters. In the cases of UN Nos. 2909, 2911, 2913 and 3326, where alternative proper shipping names are separated by the word "or" only the relevant proper shipping name shall be used.*

[b] *The term "fissile-excepted" refers only to material excepted under 2.2.7.2.3.5.*

[c] *For UN No. 3507, see also special provision 369 in Chapter 3.3.*".

2.2.7.2.2 Amend the heading to read:

"**2.2.7.2.2** ***Determination of basic radionuclide values***"

2.2.7.2.2.1 In (b), insert "limits" after "concentration".

Table 2.2.7.2.2.1 In the heading of column 4 insert "limit" after "concentration".

In (a) after the table, in the introductory sentence, replace "from daughter radionuclides" by "from their progeny".

2.2.7.2.2.2 Amend the text before the Table to read as follows:

"2.2.7.2.2.2 For individual radionuclides:

(a) Which are not listed in Table 2.2.7.2.2.1 the determination of the basic radionuclide values referred to in 2.2.7.2.2.1 shall require multilateral approval. For these radionuclides, activity concentration limits for exempt material and activity limits for exempt consignments shall be calculated in accordance with the principles established in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996). It is permissible to use an A_2 value calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal and accident conditions of carriage are taken into consideration. Alternatively, the radionuclide values in Table 2.2.7.2.2.2 may be used without obtaining competent authority approval;

(b) In instruments or articles in which the radioactive material is enclosed or is included as a component part of the instrument or other manufactured article and which meet 2.2.7.2.4.1.3 (c), alternative basic radionuclide values to those in Table 2.2.7.2.2.1 for the activity limit for an exempt consignment are permitted and shall require multilateral approval. Such alternative activity limits for an exempt consignment shall be calculated in accordance with the principles set out in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996).".

Table 2.2.7.2.2.2 In the heading of the fourth column, insert "limit" after "concentration".

2.2.7.2.2.4 In the introductory sentence delete "the determination of" and in the legend for X(i) and X_m replace "concentration" by "concentration limit".

2.2.7.2.3.1.2 In (a) (i), delete "which are intended to be processed for the use of these radionuclides".

2.2.7.2.3.1.2 Amend (a) (iii) to read: "(iii) radioactive material for which the A_2 value is unlimited. Fissile material may be included only if excepted under 2.2.7.2.3.5;".

2.2.7.2.3.1.2 In (a) (iv), replace ", excluding fissile material not excepted under 2.2.7.2.3.5" by ". Fissile material may be included only if excepted under 2.2.7.2.3.5".

2.2.7.2.3.1.2 In (b) (i), delete "or".

2.2.7.2.3.1.2 In (c), introductory sentence, replace "meeting the requirements" by "that meet the requirements".

2.2.7.2.3.1.2 In (c) (i) replace "bitumen, ceramic, etc." by "bitumen and ceramic".

2.2.7.2.3.3.5 (d) The amendment does not apply to the English text.

2.2.7.2.3.3.6 The amendment to the introductory sentence does not apply to the English text.

2.2.7.2.3.3.6 (a) Amend to read as follows:

"(a) The tests prescribed in 2.2.7.2.3.3.5 (a) and (b) provided that the specimens are alternatively subjected to the impact test prescribed in ISO 2919:2012: "Radiation Protection - Sealed Radioactive Sources - General requirements and classification":

(i) The Class 4 impact test if the mass of the special form radioactive material is equal to or less than 200 g;

(ii) The Class 5 impact test if the mass of the special form radioactive material is equal to or more than 200 g but is less than 500 g;".

2.2.7.2.3.3.6 In (b), replace "ISO 2919:1999" by "ISO 2919:2012".

2.2.7.2.3.3.8 In (b), replace "which are acceptable" by "provided that they are acceptable".

2.2.7.2.3.5 Amend the first paragraph to read as follows:

"Fissile material and packages containing fissile material shall be classified under the relevant entry as "FISSILE" in accordance with Table 2.2.7.2.1.1 unless excepted by one of the provisions of sub-paragraphs (a) to (f) below and carried subject to the requirements of 7.5.11 CV33 (4.3). All provisions apply only to material in packages that meets the requirements of 6.4.7.2 unless unpackaged material is specifically allowed in the provision.".

2.2.7.2.3.5 Delete current sub-paragraphs (a) and (d). Current (b) and (c) become new (a) and (b) respectively.

2.2.7.2.3.5 Insert the following new sub-paragraphs (c) to (f):

"(c) Uranium with a maximum uranium enrichment of 5% by mass uranium-235 provided:

(i) There is no more than 3.5 g of uranium-235 per package;

(ii) The total plutonium and uranium-233 content does not exceed 1% of the mass of uranium-235 per package;

(iii) Carriage of the package is subject to the consignment limit provided in 7.5.11 CV33 (4.3) (c);

(d) Fissile nuclides with a total mass not greater than 2.0 g per package provided the package is carried subject to the consignment limit provided in 7.5.11 CV33 (4.3) (d);

(e) Fissile nuclides with a total mass not greater than 45 g either packaged or unpackaged subject to limits provided in 7.5.11 CV33 (4.3) (e);

(f) A fissile material that meets the requirements of 7.5.11 CV33 (4.3) (b), 2.2.7.2.3.6 and 5.1.5.2.1.".

Table 2.2.7.2.3.5 Delete.

Insert a new paragraph 2.2.7.2.3.6 to read as follows:

"2.2.7.2.3.6 A fissile material excepted from classification as "FISSILE" under 2.2.7.2.3.5 (f) shall be subcritical without the need for accumulation control under the following conditions:

(a) The conditions of 6.4.11.1 (a);

(b) The conditions consistent with the assessment provisions stated in 6.4.11.12 (b) and 6.4.11.13 (b) for packages.".

2.2.7.2.4.1.1 Amend to read as follows:

"2.2.7.2.4.1.1 A package may be classified as an excepted package if it meets one of the following conditions:

(a) It is an empty package having contained radioactive material;

(b) It contains instruments or articles not exceeding the activity limits specified in columns (2) and (3) of Table 2.2.7.2.4.1.2;

(c) It contains articles manufactured of natural uranium, depleted uranium or natural thorium;

(d) It contains radioactive material not exceeding the activity limits specified in column (4) of Table 2.2.7.2.4.1.2; or

(e) It contains less than 0.1 kg of uranium hexafluoride not exceeding the activity limits specified in column (4) of Table 2.2.7.2.4.1.2.".

2.2.7.2.4.1.3 In the introductory sentence replace "only if" by "provided that".

2.2.7.2.4.1.3 First amendment to (a) does not apply to the English text.

2.2.7.2.4.1.3 (a) Delete "and" at the end.

2.2.7.2.4.1.3 (b) Amend to read as follows:

"(b) Each instrument or manufactured article bears the marking "RADIOACTIVE" on its external surface except for the following:

(i) radioluminescent time-pieces or devices;

(ii) consumer products that have either received regulatory approval in accordance with 1.7.1.4 (e) or do not individually exceed the activity limit for an exempt consignment in Table 2.2.7.2.2.1 (column 5), provided such products are transported in a package that bears the marking "RADIOACTIVE" on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; and

(iii) other instruments or articles too small to bear the marking "RADIOACTIVE", provided that they are transported in a package that bears the marking "RADIOACTIVE" on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package;".

2.2.7.2.4.1.4 Amend (b) to read as follows:

"(b) The package bears the marking "RADIOACTIVE" on either:

(i) An internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; or

(ii) The outside of the package, where it is impractical to mark an internal surface.".

Insert a new paragraph 2.2.7.2.4.1.5 to read as follows:

"2.2.7.2.4.1.5 Uranium hexafluoride not exceeding the limits specified in Column 4 of Table 2.2.7.2.4.1.2 may be classified under UN 3507 URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted provided that:

(a) The mass of uranium hexafluoride in the package is less than 0.1 kg;

(b) The conditions of 2.2.7.2.4.5.1 and 2.2.7.2.4.1.4 (a) and (b) are met.".

Current 2.2.7.2.4.1.5 becomes new 2.2.7.2.4.1.7.

2.2.7.2.4.1.6 Replace "only if" by "provided that". The second amendment does not apply to the English text.

2.2.7.2.4.1.7 (former 2.7.2.4.1.5) In the introductory sentence replace "only if" by "provided that". The other amendments do not apply to the English text.

2.2.7.2.4.4 In the sentence preceding sub-paragraph (a), replace "activities greater than the following:" by "activities greater than either of the following:".

2.2.7.2.4.4 In (a), delete "or".

2.2.7.2.4.4 In the legend for C(j), delete "and".

2.2.7.2.4.5 Amend to read as follows:

"2.2.7.2.4.5 Classification of uranium hexafluoride

2.2.7.2.4.5.1 Uranium hexafluoride shall only be assigned to:

(a) UN No. 2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE;

(b) UN No. 2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted; or

(c) UN No. 3507, URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted.

2.2.7.2.4.5.2 The contents of a package containing uranium hexafluoride shall comply with the following requirements:

(a) For UN Nos. 2977 and 2978, the mass of uranium hexafluoride shall not be different from that allowed for the package design, and for UN No. 3507, the mass of uranium hexafluoride shall be less than 0.1 kg;

(b) The mass of uranium hexafluoride shall not be greater than a value that would lead to an ullage smaller than 5% at the maximum temperature of the package as specified for the plant systems where the package shall be used; and

(c) The uranium hexafluoride shall be in solid form and the internal pressure shall not be above atmospheric pressure when presented for carriage.".

2.2.7.2.4.6.1 Replace "competent authority approval certificate" by "competent authority certificate of approval".

2.2.7.2.4.6.2, 2.2.7.2.4.6.3 and 2.2.7.2.4.6.4 Replace by a new paragraph to read as follows:

"2.2.7.2.4.6.2 The contents of a Type B(U), Type B(M) or Type C package shall be as specified in the certificate of approval.".

2.2.9.2 After "230" add ", 310"

2.2.9.3 Under "Substances which, on inhalation as fine dust, may endanger health" (M1), replace all three entries by:

"2212 ASBESTOS, AMPHIBOLE (amosite, tremolite, actinolite, anthophyllite, crocidolite)

2590 ASBESTOS, CHRYSOTILE".

2.2.9.3 Under "Live-saving appliances" (M5), replace the three entries for UN No. 3268 by:

"3268 SAFETY DEVICES, electrically initiated".

2.2.9.3 Under "Other substances..." (M11), replace the entry for UN No. 3499 by the following entry:

"3499 CAPACITOR, ELECTRIC DOUBLE LAYER (with an energy storage capacity greater than 0.3Wh)".

2.2.9.3 Under "Other substances..." (M11), after the entry for UN No. 3499, add the following entries:

"3508 CAPACITOR, ASYMMETRIC (with an energy storage capacity greater than 0.3Wh)

3509 PACKAGINGS, DISCARDED, EMPTY, UNCLEANED".

Chapter 3.2

3.2.1 Under "Explanations", in the second paragraph, add the following new sentence at the end of the second indent:

"When used in this table, an alphanumeric code starting with the letters "SP" designates a special provision of Chapter 3.3.".

3.2.1 Amend the explanation for column (17), Table A, to read as follows:

"Column (17) "Special provisions for carriage – Bulk"

Contains the alphanumeric code(s), starting with letters "VC", as well as the alphanumeric code(s) starting with letters "AP", of the applicable provisions for carriage in bulk. These are listed in 7.3.3. If no code or a reference to a specific paragraph is given, carriage in bulk is not permitted. General and additional provisions concerning carriage in bulk are to be found in Chapters 7.1 and 7.3.

NOTE: *In addition, special provisions indicated in Column (18), concerning loading, unloading and handling, shall be observed.*".

Table A:

For the entries to which "VV1" is assigned in column (17), (UN Nos. 1309 PG III, 1312, 1313, 1314, 1318, 1325 PG III, 1328, 1330, 1332, 1338, 1346, 1350, 1408, 1869, 2001, 2213, 2538, 2687, 2714, 2715, 2717, 2858, 2878, 2989 PG III, 3077, 3089 PG III, 3178 PG III, 3181 PG III and 3182 PG III), replace "VV1" by "VC1 VC2".

For the entries to which "VV4" is assigned in column (17), (UN Nos. 1361 PG III, 1362, 1363, 1364, 1365, 1373, 1376, 1379, 1386, 1932, 2008 PG III, 2009, 2210, 2217, 2545 PG III, 2546 PG III, 2793, 2881 PG III, 3189 PG III, 3190 PG III and 3497 PG III), replace "VV4" by "VC1 VC2 AP1".

For the entries to which "VV3" is assigned in column (17), (UN Nos. 1841, 1931, 2211, 2969, 3170 PG II, 3175 and 3314), replace "VV3" by "VC1 VC2".

For the entries to which "VV8" is assigned in column (17), (UN Nos. 1438, 1442, 1444, 1450, 1451, 1452, 1454, 1455, 1458 PG II and III, 1459 PG II and III, 1461, 1465, 1466, 1467, 1473, 1474, 1475, 1477 PG III, 1481 PG II and III, 1484, 1485, 1486, 1487, 1488, 1489, 1492, 1493, 1494, 1495, 1498, 1499, 1502, 1505, 1506, 1507, 1508, 1513, 1942, 2067, 2469, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2728, 2880 PG III, 3215, 3377 and 3378 PG II and III), replace "VV8" by "VC1 VC2 AP6 AP7".

For the entries to which "VV9" is assigned in column (17), (UN Nos. 1544 PG III, 1548, 1549, 1550, 1551, 1557 PG III, 1564 PG III, 1566 PG III, 1579, 1588 PG III, 1601 PG III, 1616, 1655 PG III, 1663, 1673, 1690, 1709, 1740 PG III, 1759 PG III, 1773, 1794, 1812, 1884, 1907, 2020, 2025 PG III, 2026 PG III, 2074, 2077, 2214, 2215 PG III, 2233, 2237, 2239, 2280, 2291, 2331, 2430 PG III, 2440, 2446, 2473, 2475, 2503, 2505, 2506, 2507, 2508, 2509, 2512, 2516, 2570 PG III, 2578, 2579, 2585, 2588 PG III, 2651, 2655, 2659, 2660, 2674, 2698, 2713, 2716, 2729, 2757 PG III, 2759 PG III, 2761 PG III, 2763 PG III, 2771 PG III, 2775 PG III, 2777 PG III, 2779 PG III, 2781 PG III, 2783 PG III, 2786 PG III, 2802, 2803, 2811 PG III, 2823, 2834, 2853, 2854, 2855, 2856, 2862, 2865, 2869 PG III, 2871, 2875, 2876, 2905, 2923 PG III, 2967, 3027 PG III, 3143 PG III, 3146 PG III, 3147 PG III, 3249 PG III, 3253, 3259 PG III, 3260 PG III, 3261 PG III, 3262 PG III, 3263 PG III, 3283 PG III, 3284 PG III, 3285 PG III, 3288 PG III, 3345 PG III, 3349 PG III, 3427, 3438, 3439 PG III, 3453, 3457, 3458, 3459, 3460, 3462 PG III, 3464 PG III, 3465 PG III, 3466 PG III, 3467 PG III and 3495), replace "VV9" by "VC1 VC2 AP7".

For the entries to which "VV10" is assigned in column (17), (UN Nos. 3243 and 3244), replace "VV10" by "VC1 VC2 AP7".

For the entries to which "VV11", "VV12" or "VV13" is assigned in column (17), (UN Nos. 3291, first entry, 3257, both entries and 3258), replace "VV11", "VV12" and "VV13" by "VC3".

For the entries to which "VV14" is assigned in column (17), (UN Nos. 2794, 2795, 2800 and 3028), replace "VV14" by "VC1 VC2 AP8".

For the entries to which "VV15" is assigned in column (17), (UN Nos. 2315, 3151, 3152 and 3432), replace "VV15" by "VC1 VC2 AP9".

For UN Nos. 0082, 0241, 0331 and 0332, in column (9a), delete "PP65".

For UN 0222 Amend the designation in column (2) to read "AMMONIUM NITRATE". In column (6) insert "370". In column (8) insert "IBC100". In column (9a), insert "B3, B17" against IBC100.

For UN No. 0503 In column (2), amend name to read: "SAFETY DEVICES, PYROTECHNIC".

For UN Nos. 1001, 1002, 1006, 1009, 1010, 1011, 1012, 1013, 1018, 1020, 1021, 1022, 1027, 1028, 1029, 1030, 1032, 1033, 1035, 1036, 1037, 1039, 1041, 1046, 1049, 1055, 1056, 1058, 1060, 1061, 1063, 1065, 1066, 1070, 1072, 1075, 1077, 1078, 1080, 1081, 1083, 1085, 1086, 1087, 1858, 1860, 1912, 1952, 1954, 1956, 1957, 1958, 1959, 1962, 1964, 1965, 1968, 1969, 1971, 1973, 1974, 1976, 1978, 1982, 1983, 1984, 2034, 2035, 2036, 2044, 2193, 2200, 2203, 2419, 2422, 2424, 2451, 2452, 2453, 2454, 2517, 2599, 2601, 2602, 3070, 3153, 3154, 3156, 3157, 3159, 3161, 3163, 3220, 3252, 3296, 3297, 3298, 3299, 3337, 3338, 3339, 3340, 3354 and 3374, in column (6) add "662".

For UN 1008, in column (6) insert "373".

For UN Nos. 1051 PG I, 1089 PG I, 1228 PG II, 1259 PG I, 1261 PG II, 1278 PG II, 1308 PG I, 1331 PG III, 1361 PG II and PG III, 1363 PG III, 1364 PG III, 1365 PG III, 1373 PG III, 1376 PG III, 1378 PG II, 1379 PG III, 1386 PG III, 1545 PG II, 1560 PG I, 1569 PG II, 1583 all packing groups, 1603 PG II, 1613 PG I, 1614 PG I, 1649 PG I, 1672 PG I, 1693 PG I and PG II, 1694 PG I, 1697 PG II, 1698 PG I, 1699 PG I, 1701 PG II, 1722 PG I, 1732 PG II, 1792 PG II, 1796 PG II, 1802 PG II, 1806 PG II, 1808 PG II, 1826 PG II, 1832 PG II, 1837 PG II, 1868 PG II, 1889 PG I, 1906 PG II, 1932 PG III, 1939 PG II, 2002 PG III, 2006 PG III, 2030 PG II, 2073, 2212 PG II, 2217 PG III, 2254 PG III, 2295 PG I, 2363 PG I, 2381 PG II, 2404 PG II, 2438 PG I, 2442 PG II, 2443 PG II, 2558 PG I, 2626 PG II, 2691 PG II, 2740 PG I, 2743 PG II, 2749 PG I, 2798 PG II, 2799 PG II, 2826 PG II, 2835 PG II, 2881 PG II, 2956 PG III, 3048 PG I, 3122 PG I, 3123 PG I, 3129 PG II, 3130 PG II, 3208 PG II, 3242 PG II, 3251 PG III, 3294 PG I, 3315 PG I, 3336 PG I, 3416 PG II, 3448 PG I and PG II, 3450 PG I, 3483 PG I and 3498 PG II, amend the code in column (7b) to read "E0".

For UN 1044, in column (9a), insert "PP91".

For UN 1082, in column (2), add "(REFRIGERANT GAS R 1113)" at the end.

For UN No. 1202, second entry, in column (2), replace "EN 590:2004" by "EN 590:2009 + A1:2010".

For all entries of UN Nos. 1202, 1203, 1223, 1268, 1863 and 3475, add "664" in column (6).

For all entries of UN Nos. 1210, 1263, 3066, 3469 and 3470 In column (6), insert "367".

For UN No. 1334, replace "VV2" by "VC1 VC2 AP1".

For UN Nos. 1394, 1402 PG II, 1435, 2813 PG III, 2968, 3208 PG III and 3209 PG III, replace "VV5" by "VC1 VC2 AP3 AP4 AP5".

For the entries UN 1396, PG III, UN 1398, UN 1418, PG III, UN 1436, PG III and UN 2950 replace "VV5" by "VC2 AP4 AP5".

For UN No. 1405 (packing group II), replace "VV7" by "VC1 VC2 AP3 AP4 AP5".

For UN Nos. 1405 (packing group III) and 2844, replace "VV5 VV7" by "VC1 VC2 AP3 AP4 AP5".

For UN No. 1408, insert "AP4 AP5" in column (17) after "VC1 VC2".

For UN Nos. 1700, 2016, 2017, 3090, 3091, 3268, 3292, 3356, 3480, 3481 and 3506, delete the packing group in column (4).

For UN 1942 Amend column (2) to read "AMMONIUM NITRATE with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance".

For UN 2025 (all three packing groups), in column (6), insert "66" and delete "585".

For UN No. 2187 In column (6) delete "593".

For UN Nos. 2211, 3175 and 3314, insert "AP2" after "VC1 VC2".

For UN 2212 In column (2) amend the name to read "ASBESTOS, AMPHIBOLE (amosite, tremolite, actinolite, anthophyllite, crocidolite)". In column (6), insert "274".

For UN 2590 In column (2) amend the name to read "ASBESTOS, CHRYSOTILE".

For UN Nos. 2908, 2909, 2910 and 2911, in column (18), insert "(See 1.7.1.5.1)".

For UN Nos. 2908 to 2913, 2915 to 2917, 2919, 2977, 2978 and 3321 to 3333, in column (19), delete "S13".

For UN 2909 The amendment does not apply to the English text.

For UN 2910 The amendment to the name in column (2) does not apply to the English text.

For UN 2910 Delete "325" and insert "368" in column (6).

For UN 2911 The amendment to the name in column (2) does not apply to the English text.

For UN 2912 Delete "VV16" in column (17) and add "see 4.1.9.2.4" in columns (10) and (17).

For UN 2913 Delete "VV17" in column (17) and add "see 4.1.9.2.4" in columns (10) and (17).

For UN Nos. 2977 and 2978 In column (6), delete "172".

For UN Nos. 3077 and 3082, in column (6), insert "375".

For UN 3089, packing group III In column (8) replace "IBC06" by "IBC08". In column (9a) insert "B4" against "IBC08". Insert "V11" in column (16).

For UN Nos. 3090, 3091, 3480 and 3481 In column (6) insert "376" and "377" and delete "661", in column (8) replace "P903a P903b" by "P908 P909 LP903 LP904".

For UN 3150, replace "P208" by "P209" in column (8).

For UN 3164, in column (6), insert "371".

For UN No. 3170 (packing group II), insert "AP4 AP5" after "VC1 VC2".

For UN No. 3170 (packing group III), replace "VV1 VV5" by "VC1 VC2 AP4 AP5".

For UN numbers 3256, 3257 and 3258, remove special provision 580 in column (6).

For UN 3268 In column (2), amend the name to read: "SAFETY DEVICES, electrically initiated".

For UN 3316 (both entries) In column (7a), replace "0" by "See SP 251". In column (7b), replace "E0" by "See SP 340".

For UN 3375 In column (8), replace "P099 IBC99" by "P505 IBC02". In column (9a), insert "B16" against "IBC02".

For UN Nos. 3393, 3394, 3395, 3396, 3397, 3398, and 3399 (all packing groups): Insert "TP41" in column (11).

For UN 3499 In column (2) amend the proper shipping name to read as follows: "CAPACITOR, ELECTRIC DOUBLE LAYER (with an energy storage capacity greater than 0.3Wh)".

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted	8		1	8	317 369	0	E0	P805								1			See SP 369	S21	
3508	CAPACITOR, ASYMMETRIC (with an energy storage capacity greater than 0.3Wh)	9	M11		9	372	0	E0	P003								4 (E)					
3509	PACKAGINGS, DISCARDED, EMPTY, UNCLEANED	9	M11		9	663	0	E0	P003 IBC08 LP02	RR9 BB3 LL1		BK2					4 (E)	VC2 AP10				90
3510	ADSORBED GAS, FLAMMABLE, N.O.S.	2	9F		2.1	274	0	E0	P208		MP9						2 (D)			CV9 CV10 CV36	S2	
3511	ADSORBED GAS, N.O.S.	2	9A		2.2	274	0	E0	P208		MP9						3 (E)			CV9 CV10 CV36		
3512	ADSORBED GAS, TOXIC, N.O.S.	2	9T		2.3	274	0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3513	ADSORBED GAS, OXIDIZING, N.O.S.	2	9O		2.2 +5.1	274	0	E0	P208		MP9						3 (E)			CV9 CV10 CV36		
3514	ADSORBED GAS, TOXIC,	2	9TF		2.3	274	0	E0	P208		MP9						1			CV9 CV10	S2	

	FLAMMABLE, N.O.S.				+2.1												(D)			CV36	S14	
3515	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	2	9TO		2.3 +5.1	274	0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3516	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	2	9TC		2.3 +8	274	0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3517	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2	9TFC		2.3 +2.1 +8	274	0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S2 S14	
3518	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2	9TO C		2.3 +5.1 +8	274	0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3519	BORON TRIFLUORIDE, ADSORBED	2	9TC		2.3 +8		0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3520	CHLORINE, ADSORBED	2	9TO C		2.3 +5.1 +8		0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3521	SILICON TETRAFLUORIDE, ADSORBED	2	9TC		2.3 +8		0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S14	
3522	ARSINE, ADSORBED	2	9TF		2.3 +2.1		0	E0	P208		MP9						1 (D)			CV9 CV10 CV36	S2 S14	
3523	GERMANE,	2	9TF		2.3		0	E0	P208		MP9						1			CV9	S2	

	ADSORBED				+2.1													(D)			CV10 CV36	S14	
3524	PHOSPHORUS PENTAFLUORIDE, ADSORBED	2	9TC		2.3 +8		0	E0	P208		MP9							1 (D)			CV9 CV10 CV36	S14	
3525	PHOSPHINE, ADSORBED	2	9TF		2.3 +2.1		0	E0	P208		MP9							1 (D)			CV9 CV10 CV36	S2 S14	
3526	HYDROGEN SELENIDE, ADSORBED	2	9TF		2.3 +2.1		0	E0	P208		MP9							1 (D)			CV9 CV10 CV36	S2 S14	

Chapter 3.3

SP122 At the end, add: ", 4.1.4.2 packing instruction IBC520 and 4.2.5.2.6 portable tank instruction T23.".

SP135 Amend to read as follows:

"135 The dihydrated sodium salt of dichloroisocyanuric acid does not meet the criteria for inclusion in Class 5.1 and is not subject to ADR unless meeting the criteria for inclusion in another Class.".

SP172 Amend to read as follows:

"172 Where a radioactive material has (a) subsidiary risk(s):

(a) The substance shall be allocated to packing group I, II or III, if appropriate, by application of the packing group criteria provided in Part 2 corresponding to the nature of the predominant subsidiary risk;

(b) Packages shall be labelled with subsidiary risk labels corresponding to each subsidiary risk exhibited by the material; corresponding placards shall be affixed to vehicles or containers in accordance with the relevant provisions of 5.3.1;

(c) For the purposes of documentation and package marking, the proper shipping name shall be supplemented with the name of the constituents which most predominantly contribute to this (these) subsidiary risk(s) and which shall be enclosed in parenthesis;

(d) The dangerous goods transport document shall indicate the label model number(s) corresponding to each subsidiary risk in parenthesis after the Class number "7" and, where assigned the packing group as required by 5.4.1.1.1 (d).

For packing, see also 4.1.9.1.5.".

SP225 At the end, add:

"Fire extinguishers shall be manufactured, tested, approved and labelled according to the provisions applied in the country of manufacture.

NOTE: *"Provisions applied in the country of manufacture" means the provisions applicable in the country of manufacture or those applicable in the country of use.*

Fire extinguishers under this entry include:

(a) portable fire extinguishers for manual handling and operation;

(b) fire extinguishers for installation in aircraft;

(c) fire extinguishers mounted on wheels for manual handling;

(d) fire extinguishing equipment or machinery mounted on wheels or wheeled platforms or units carried similar to (small) trailers, and

(e) fire extinguishers composed of a non-rollable pressure drum and equipment, and handled e.g. by fork lift or crane when loaded or unloaded.

NOTE: *Pressure receptacles which contain gases for use in the above-mentioned fire extinguishers or for use in stationary fire-fighting installations shall meet the requirements of Chapter 6.2 and all requirements applicable to the relevant gas when these pressure receptacles are carried separately.".*

SP235 Amend to read as follows:

"235 This entry applies to articles which contain Class 1 explosive substances and which may also contain dangerous goods of other classes. These articles are used to enhance safety in

vehicles, vessels or aircraft – e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices.".

SP251 Insert the following new third paragraph (after "to any individual substance in the kit."): "Where the kit contains only dangerous goods to which no packing group is assigned, no packing group need be indicated on the dangerous goods transport document.".

SP280 Amend to read as follows:

"280 This entry applies to safety devices for vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices, which contain dangerous goods of Class 1 or of other classes, when carried as component parts and if these articles as presented for carriage have been tested in accordance with Test Series 6(c) of Part 1 of the Manual of Tests and Criteria, with no explosion of the device, no fragmentation of device casing or pressure receptacle, and no projection hazard nor thermal effect which would significantly hinder fire-fighting or emergency response efforts in the immediate vicinity. This entry does not apply to life saving appliances described in special provision 296 (UN Nos. 2990 and 3072).".

SP289 Amend to read as follows:

"289 Safety devices, electrically initiated and safety devices, pyrotechnic installed in vehicles, wagons, vessels or aircraft or in completed components such as steering columns, door panels, seats, etc. are not subject to ADR.".

SP306 Amend to read as follows:

"306 This entry may only be used for substances that are too insensitive for acceptance into Class 1 when tested in accordance with Test Series 2 (see *Manual of Tests and Criteria*, Part I).".

SP309 Amend the last sentence to read as follows:

"Substances shall satisfactorily pass Tests 8 (a), (b) and (c) of Test Series 8 of the *Manual of Tests and Criteria*, Part I, Section 18 and be approved by the competent authority.".

SP363 In subparagraph (c), replace "orientated" by "oriented".

SP580 Delete special provision 580 and insert "580 (*Deleted*)".

SP582 Amend to read as follows:

"582 This entry covers, inter alia, mixtures of gases indicated by the letter R ..., with the following properties:

Mixture	*Maximum vapour pressure at 70 °C (MPa)*	*Minimum density at 50 °C (kg/l)*	*Permitted technical name for purposes of 5.4.1.1*
F1	**1.3**	**1.30**	**"Mixture F1"**
F2	**1.9**	**1.21**	**"Mixture F2"**
F3	**3.0**	**1.09**	**"Mixture F3"**

NOTE 1: *Trichlorofluoromethane (refrigerant R 11), 1,1,2-trichloro-1,2,2-trifluoroethane (refrigerant R 113), 1,1,1-trichloro-2,2,2-trifluoroethane (refrigerant R 113a), 1-chloro-1,2,2-trifluoroethane (refrigerant R 133) and 1-chloro-1,1,2-trifluoroethane (refrigerant R 133b) are not substances of Class 2. They may, however, enter into the composition of mixtures F1 to F3.*

NOTE 2: *The reference densities correspond to the densities of dichlorofluoromethane (1.30 kg/l), dichloridifluoromethane (1.21 kg/l) and chlorodifluoromethane (1.09 kg/l).".*

SP583 Amend to read as follows:

"583 This entry covers, inter alia, mixtures of gases with the following properties:

Mixture	*Maximun vapour pressure at 70 °C (MPa)*	*Minimun density at 50 °C (kg/l)*	*Permitted technical name[a] for purposes of 5.4.1.1*
A	**1.1**	**0.525**	**"Mixture A" or "Butane"**
A01	**1.6**	**0.516**	**"Mixture A01" or "Butane"**
A02	**1.6**	**0.505**	**"Mixture A02" or "Butane"**
A0	**1.6**	**0.495**	**"Mixture A0" or "Butane"**
A1	**2.1**	**0.485**	**"Mixture A1"**
B1	**2.6**	**0.474**	**"Mixture B1"**
B2	**2.6**	**0.463**	**"Mixture B2"**
B	**2.6**	**0.450**	**"Mixture B"**
C	**3.1**	**0.440**	**"Mixture C" or "Propane"**

[a] *For carriage in tanks, the trade names "Butane" or "Propane" may be used only as a complement."*

SP585 Delete special provision 585 and insert "585 *(Deleted)*".

SP594 Replace "according to the Regulations of the manufacturing State" by "according to the provisions applied in the country of manufacture". At the end, insert the following new NOTE:

*"**NOTE:** "Provisions applied in the country of manufacture" means the provisions applicable in the country of manufacture or those applicable in the country of use.".*

SP636 (b) Amend to read as follows:

"(b) Up to the intermediate processing facility, lithium cells and batteries with a gross mass of not more than 500 g each or lithium ion cells with a Watt-hour rating of not more than 20 Wh, lithium ion batteries with a Watt-hour rating of not more than 100 Wh, lithium metal cells with a lithium content of not more than 1 g and lithium metal batteries with an aggregate lithium content of not more than 2 g, whether or not contained in equipment, collected and handed over for carriage for disposal or recycling, together with or without other non-lithium cells or batteries, are not subject to the other provisions of ADR including special provision 376 and paragraph 2.2.9.1.7, if they meet the following conditions:

(i) The provisions of packing instruction P909 of 4.1.4.1 apply except for the additional requirements 1 and 2;

(ii) A quality assurance system is in place to ensure that the total amount of lithium cells or batteries per transport unit does not exceed 333 kg;

NOTE: *The total quantity of lithium cells and batteries in the mix may be assessed by means of a statistical method included in the quality assurance system. A copy of the quality assurance records shall be made available to the competent authority upon request.*

(iii) Packages are marked "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING" as appropriate.".

SP660 (g) (v) Replace "nominal capacity" by "water capacity".

SP661 Delete special provision 661 and insert "661 *(Deleted)*".

Add the following new special provisions:

"66 Cinnabar is not subject to the requirements of ADR.".

"367 For the purposes of documentation:

The proper shipping name "Paint related material" may be used for consignments of packages containing "Paint" and "Paint related material" in the same package;

The proper shipping name "Paint related material, corrosive, flammable" may be used for consignments of packages containing "Paint, corrosive, flammable" and "Paint related material, corrosive, flammable" in the same package;

The proper shipping name "Paint related material, flammable, corrosive" may be used for consignments of packages containing "Paint, flammable, corrosive" and "Paint related material, flammable, corrosive" in the same package; and

The proper shipping name "Printing ink related material" may be used for consignments of packages containing "Printing ink" and "Printing ink related material" in the same package.".

"368 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material shall be classified under UN No. 3507 or UN No. 2978.".

"369 In accordance with 2.1.3.5.3 (a), this radioactive material in an excepted package possessing corrosive properties is classified in Class 8 with a radioactive material subsidiary risk.

Uranium hexafluoride may be classified under this entry only if the conditions of 2.2.7.2.4.1.2, 2.2.7.2.4.1.5, 2.2.7.2.4.5.2 and, for fissile-excepted material, of 2.2.7.2.3.6 are met.

In addition to the provisions applicable to the carriage of Class 8 substances, the provisions of 5.1.3.2, 5.1.5.2.2, 5.1.5.4.1 (b), 7.5.11 CV33 (3.1), (5.1) to (5.4) and (6) apply.

No Class 7 label is required to be displayed.".

"370 This entry applies to:

- ammonium nitrate with more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance; and

- ammonium nitrate with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance, that is not too sensitive for acceptance into Class 1 when tested in accordance with Test Series 2 (see Manual of Tests and Criteria, Part I). See also UN No. 1942.".

"371 (1) This entry also applies to articles, containing a small pressure receptacle with a release device. Such articles shall comply with the following requirements:

(a) The water capacity of the pressure receptacle shall not exceed 0.5 litres and the working pressure shall not exceed 25 bar at 15 °C;

(b) The minimum burst pressure of the pressure receptacle shall be at least four times the pressure of the gas at 15 °C;

(c) Each article shall be manufactured in such a way that unintentional firing or release is avoided under normal conditions of handling, packing, carriage and use. This may be fulfilled by an additional locking device linked to the activator;

(d) Each article shall be manufactured in such a way as to prevent hazardous projections of the pressure receptacle or parts of the pressure receptacle;

(e) Each pressure receptacle shall be manufactured from material which will not fragment upon rupture;

(f) The design type of the article shall be subjected to a fire test. For this test, the provisions of paragraphs 16.6.1.2 except letter g, 16.6.1.3.1 to 16.6.1.3.6, 16.6.1.3.7 (b) and 16.6.1.3.8 of the Manual of Tests and Criteria shall be applied. It shall be demonstrated that the article relieves its pressure by means of a fire degradable seal or other pressure relief device, in such a way that the pressure receptacle will not fragment and that the article or fragments of the article do not rocket more than 10 metres;

(g) The design type of the article shall be subjected to the following test. A stimulating mechanism shall be used to initiate one article in the middle of the packaging. There shall be no hazardous effects outside the package such as disruption of the package, metal fragments or a receptacle which passes through the packaging.

(2) The manufacturer shall produce technical documentation of the design type, manufacture as well as the tests and their results. The manufacturer shall apply procedures to ensure that articles produced in series are made of good quality, conform to the design type and are able to meet the requirements in (1). The manufacturer shall provide such information to the competent authority on request.".

"372 This entry applies to asymmetric capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to ADR.

Energy storage capacity means the energy stored in a capacitor, as calculated according to the following equation,

$$Wh = 1/2C_N(U_R^2-U_L^2) \times (1/3600),$$

using the nominal capacitance (C_N), rated voltage (U_R) and rated lower limit voltage (U_L).

All asymmetric capacitors to which this entry applies shall meet the following conditions:

(a) Capacitors or modules shall be protected against short circuit;

(b) Capacitors shall be designed and constructed to safely relieve pressure that may build up in use, through a vent or a weak point in the capacitor casing. Any liquid which is released upon venting shall be contained by packaging or by equipment in which a capacitor is installed;

(c) Capacitors shall be marked with the energy storage capacity in Wh; and

(d) Capacitors containing an electrolyte meeting the classification criteria of any class of dangerous goods shall be designed to withstand a 95 kPa pressure differential;

Capacitors containing an electrolyte not meeting the classification criteria of any class of dangerous goods, including when configured in a module or when installed in equipment are not subject to other provisions of ADR.

Capacitors containing an electrolyte meeting the classification criteria of any class of dangerous goods, with an energy storage capacity of 20 Wh or less, including when configured in a module, are not subject to other provisions of ADR when the capacitors are capable of withstanding a 1.2 metre drop test unpackaged on an unyielding surface without loss of contents.

Capacitors containing an electrolyte meeting the classification criteria of any class of dangerous goods that are not installed in equipment and with an energy storage capacity of more than 20 Wh are subject to ADR.

Capacitors installed in equipment and containing an electrolyte meeting the classification criteria of any class of dangerous goods, are not subject to other provisions of ADR provided that the equipment is packaged in a strong outer packaging constructed of suitable material, and of adequate strength and design, in relation to the packaging's intended use and in such a

manner as to prevent accidental functioning of capacitors during carriage. Large robust equipment containing capacitors may be offered for carriage unpackaged or on pallets when capacitors are afforded equivalent protection by the equipment in which they are contained.

NOTE: *Notwithstanding the provisions of this special provision, nickel-carbon asymmetric capacitors containing Class 8 alkaline electrolytes shall be carried as UN 2795 BATTERIES, WET, FILLED WITH ALKALI, electric storage.".*

"373 Neutron radiation detectors containing non-pressurized boron trifluoride gas may be carried under this entry provided that the following conditions are met:

(a) Each radiation detector shall meet the following conditions.

(i) The pressure in each detector shall not exceed 105 kPa absolute at 20 °C;

(ii) The amount of gas shall not exceed 13 g per detector;

(iii) Each detector shall be manufactured under a registered quality assurance programme;

NOTE: *ISO 9001:2008 may be used for this purpose.*

(iv) Each neutron radiation detector shall be of welded metal construction with brazed metal to ceramic feed through assemblies. These detectors shall have a minimum burst pressure of 1800 kPa as demonstrated by design type qualification testing; and

(v) Each detector shall be tested to a 1 x 10^{-10} cm^3/s leaktightness standard before filling.

(b) Radiation detectors carried as individual components shall be carried as follows:

(i) Detectors shall be packed in a sealed intermediate plastics liner with sufficient absorbent material to absorb the entire gas contents;

(ii) They shall be packed in strong outer packaging. The completed package shall be capable of withstanding a 1.8 m drop test without leakage of gas contents from detectors;

(iii) The total amount of gas from all detectors per outer packaging shall not exceed 52 g.

(c) Completed neutron radiation detection systems containing detectors meeting the conditions of paragraph (a) shall be carried as follows:

(i) The detectors shall be contained in a strong sealed outer casing;

(ii) The casing shall contain sufficient absorbent material to absorb the entire gas contents;

(iii) The completed systems shall be packed in strong outer packagings capable of withstanding a 1.8 m drop test without leakage unless a system's outer casing affords equivalent protection.

Packing instruction P200 of 4.1.4.1 is not applicable.

The transport document shall include the following statement "Carriage in accordance with special provision 373".

Neutron radiation detectors containing not more than 1 g of boron trifluoride, including those with solder glass joints, are not subject to ADR provided they meet the requirements in paragraph (a) and are packed in accordance with paragraph (b). Radiation detection systems containing such detectors are not subject to ADR provided they are packed in accordance with paragraph (c).".

"374 *(Reserved)*".

"375 These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 *l* or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.".

"376 Lithium ion cells or batteries and lithium metal cells or batteries identified as being damaged or defective such that they do not conform to the type tested according to the applicable provisions of the Manual of Tests and Criteria shall comply with the requirements of this special provision.

For the purposes of this special provision, these may include, but are not limited to:

- Cells or batteries identified as being defective for safety reasons;
- Cells or batteries that have leaked or vented;
- Cells or batteries that cannot be diagnosed prior to carriage; or
- Cells or batteries that have sustained physical or mechanical damage.

NOTE: *In assessing a battery as damaged or defective, the type of battery and its previous use and misuse shall be taken into account.*

Cells and batteries shall be carried according to the provisions applicable to UN No. 3090, UN No. 3091, UN No. 3480 and No. UN 3481, except special provision 230 and as otherwise stated in this special provision.

Packages shall be marked "DAMAGED/DEFECTIVE LITHIUM-ION BATTERIES" or "DAMAGED/DEFECTIVE LITHIUM METAL BATTERIES", as applicable.

Cells and batteries shall be packed in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

Cells and batteries liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of carriage shall not be carried except under conditions specified by the competent authority.".

"377 Lithium ion and lithium metal cells and batteries and equipment containing such cells and batteries carried for disposal or recycling, either packed together with or packed without non-lithium batteries, may be packaged in accordance with packing instruction P909 of 4.1.4.1.

These cells and batteries are not subject to the requirements of 2.2.9.1.7 (a) to (e).

Packages shall be marked "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING".

Identified damaged or defective batteries shall be carried in accordance with special provision 376 and packaged in accordance with P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.".

"662 Cylinders not conforming to the provisions of Chapter 6.2 which are used exclusively on board a ship or aircraft, may be carried for the purpose of filling or inspection and subsequent return, provided the cylinders are designed and constructed in accordance with a standard recognized by the competent authority of the country of approval and all the other relevant requirements of ADR are met including:

(a) The cylinders shall be carried with valve protection in conformity with 4.1.6.8;

(b) The cylinders shall be marked and labelled in conformity with 5.2.1 and 5.2.2; and

(c) All the relevant filling requirements of packing instruction P200 of 4.1.4.1 shall be complied with.

The transport document shall include the following statement: "Carriage in accordance with special provision 662".

"663 This entry may only be used for packagings, large packagings or IBCs, or parts thereof, which have contained dangerous goods which are carried for disposal, recycling or recovery of their material, other than reconditioning, repair, routine maintenance, remanufacturing or reuse, and which have been emptied to the extent that only residues of dangerous goods adhering to the packaging parts are present when they are handed over for carriage.

Scope:

Residues present in the packagings, discarded, empty, uncleaned shall only be of dangerous goods of classes 3, 4.1, 5.1, 6.1, 8 or 9. In addition, they shall not be:

- Substances assigned to packing group I or that have "0" assigned in Column (7a) of Table A of Chapter 3.2; nor
- Substances classified as desensitized explosive substances of Class 3 or Class 4.1; nor
- Substances classified as self-reactive substances of Class 4.1; nor
- Asbestos (UN 2212 and UN 2590), polychlorinated biphenyls (UN 2315 and UN 3432) and polyhalogenated biphenyls or polyhalogenated terphenyls (UN 3151 and UN 3152).

General provisions:

Packagings, discarded, empty, uncleaned with residues presenting a risk or a subsidiary risk of Class 5.1 shall not be packed together with other packagings, discarded, empty, uncleaned, or loaded together with other packagings, discarded, empty, uncleaned in the same container, vehicle or bulk container.

Documented sorting procedures shall be implemented on the loading site to ensure compliance with the provisions applicable to this entry.

***NOTE**: All the other provisions of ADR apply.".*

"664 When substances under this entry are carried in fixed tanks (tank-vehicles) or demountable tanks, these tanks may be equipped with additive devices.

Additive devices:

- are part of the service equipment for dispensing additives of UN 1202, UN 1993 packing group III, UN 3082 or non-dangerous substances during discharge of the tank;
- consist of elements such as connecting pipes and hoses, closing devices, pumps and dosing devices which are permanently connected to the emptying device of the tank's service equipment;
- include means of containment which are an integral part of the shell, or permanently fixed to the exterior of the tank or tank-vehicle.

Alternatively, additive devices may have connectors for connecting packagings. In this latter case, the packaging itself is not considered part of the additive device.

The following requirements shall apply depending on the configuration:

(a) Construction of the means of containment:

(i) As an integral part of the shell (e.g. a tank compartment), they shall meet the relevant provisions of Chapter 6.8.

(ii) When permanently fixed to the exterior of the tank or to the tank-vehicle, they are not subject to the construction provisions of ADR provided they comply with the following provisions:

They shall be made of a metallic material and comply with the following minimum wall thickness requirements:

Material	*Minimum wall thickness*[a]
Austenitic stainless steels	2.5 mm
Other steels	3 mm
Aluminium alloys	4 mm
Pure aluminium of 99.80%	6 mm

[a] *For means of containment made with double walls, the aggregate thickness of the outer metal wall and the inner metal wall shall correspond to the wall thickness prescribed.*

Welding shall be carried out in accordance with 6.8.2.1.23.

(iii) Packagings which are connectable to the additive device shall be metal packagings and meet the relevant construction requirements of Chapter 6.1, as applicable for the additive concerned.

(b) Tank approval

For tanks equipped or intended to be equipped with additive devices, where the additive device is not included in the original type approval of the tank, the provisions of 6.8.2.3.4 shall apply.

(c) Use of means of containment and additive devices

(i) In case of (a) (i) above, no additional requirements.

(ii) In case of (a) (ii) above, the total capacity of the means of containment shall not exceed 400 litres per vehicle.

(iii) In case of (a) (iii) above, 7.5.7.5 and 8.3.3 shall not apply. The packagings may only be connected to the additive device during discharge of the tank. During carriage, the closures and connectors shall be closed so as to be leaktight.

(d) Testing for additive devices

The provisions of 6.8.2.4 shall apply to the additive device. However, in case of (a) (ii) above, at the time of the initial, intermediate or periodic inspection of the tank, the means of containment of the additive device shall only be subject to an external visual inspection and a leakproofness test. The leakproofness test shall be carried out at a test pressure of at least 0.2 bar.

NOTE: *For the packagings described in (a) (iii) above, the relevant provisions of ADR shall apply.*

(e) Transport document

Only the information required in accordance with 5.4.1.1.1 (a) to (d) needs to be added to the transport document for the additive concerned. The following shall also be entered in the transport document: "Carriage in accordance with special provision 664".

(f) Training of drivers

Drivers who have been trained in accordance with 8.2.1 for carriage of this substance in tanks need no additional training for the carriage of the additives;

(g) Placarding or marking

Placarding or marking of the fixed tank (tank-vehicle) or demountable tank for the carriage of substances under this entry in accordance with Chapter 5.3 is not affected by the presence of an additive device or the additives contained therein.".

Chapter 3.4

Amend section 3.4.7 and 3.4.8 to read as follows:

"**3.4.7 Marking for packages containing limited quantities**

3.4.7.1 Except for air transport, packages containing dangerous goods in limited quantities shall bear the marking shown in Figure 3.4.7.1:

Figure 3.4.7.1

Marking for packages containing limited quantities

The marking shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness.

The marking shall be in the form of a square set at an angle of 45° (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of the line forming the diamond shall be 2 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

3.4.7.2 If the size of the package so requires, the minimum outer dimensions shown in Figure 3.4.7.1 may be reduced to be not less than 50 mm x 50 mm provided the marking remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm.

3.4.8 Marking for packages containing limited quantities conforming to Part 3, Chapter 4 of the ICAO Technical Instructions

3.4.8.1 Packages containing dangerous goods packed in conformity with the provisions of Part 3, Chapter 4 of the ICAO Technical Instructions may bear the marking shown in Figure 3.4.8.1 to certify conformity with these provisions:

Figure 3.4.8.1

Marking for packages containing limited quantities conforming to Part 3, Chapter 4 of the ICAO Technical Instructions

The marking shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness.

The marking shall be in the form of a square set at an angle of 45° (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of the line forming the diamond shall be 2 mm. The symbol "Y" shall be placed in the centre of the mark and shall be clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

3.4.8.2 If the size of the package so requires, the minimum outer dimensions shown in Figure 3.4.8.1 may be reduced to be not less than 50 mm x 50 mm provided the marking remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm. The symbol "Y" shall remain in approximate proportion to that shown in Figure 3.4.8.1.".

3.4.9 Amend to read as follows:

"3.4.9 Packages containing dangerous goods bearing the marking shown in 3.4.8 with or without the additional labels and markings for air transport shall be deemed to meet the provisions of section 3.4.1 as appropriate and of sections 3.4.2 to 3.4.4 and need not bear the marking shown in 3.4.7.".

3.4.10 Amend to read as follows:

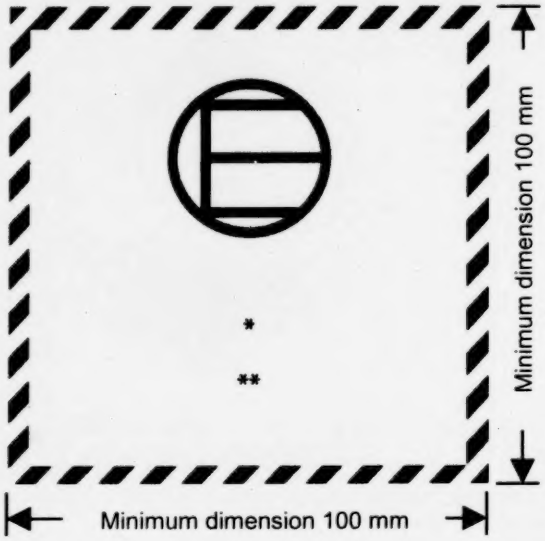
"3.4.10 Packages containing dangerous goods in limited quantities bearing the marking snown in 3.4.7 and conforming with the provisions of the ICAO Technical Instructions, including all necessary marks and labels specified in Parts 5 and 6, shall be deemed to meet the provisions of section 3.4.1 as appropriate and of sections 3.4.2 to 3.4.4.".

Chapter 3.5

3.5.4.2 Amend to read as follows:

"**3.5.4.2** ***Excepted quantities mark***

Figure 3.5.4.2



Excepted quantities mark

* The first or only label number indicated in column (5) of Table A of Chapter 3.2 shall be shown in this location.

** The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.

The marking shall be in the form of a square. The hatching and symbol shall be of the same colour, black or red, on white or suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.".

Chapter 4.1

4.1.1.5 Add a new 4.1.1.5.2 to read as follows:

"4.1.1.5.2 Use of supplementary packagings within an outer packaging (e.g. an intermediate packaging or a receptacle inside a required inner packaging) additional to what is required by the packing instructions is authorized provided all relevant requirements are met, including those of 4.1.1.3, and, if appropriate, suitable cushioning is used to prevent movement within the packaging.".

4.1.1.11 At the end, add a new Note to read as follows:

"***NOTE:*** *When such packagings are carried for disposal, recycling or recovery of their material, they may also be carried under UN 3509 provided the conditions of special provision 663 of Chapter 3.3 are met.*".

4.1.1.21.6 In the table, for UN No. 1202, first and fourth entries, in Column (2b), replace "EN 590:2004" by "EN 590:2009 + A1:2010".

4.1.3.1 Amend the definition of "L" to read as follows:

""L" for large packagings or "LL" for special packing provisions specific to ADR;"

4.1.4.1, P003 Add a new special packing provision PP91 to read as follows:

"PP91 For UN 1044, large fire extinguishers may also be carried unpackaged provided that the requirements of 4.1.3.8.1 (a) to (e) are met, the valves are protected by one of the methods in accordance with 4.1.6.8 (a) to (d) and other equipment mounted on the fire extinguisher is protected to prevent accidental activation. For the purpose of this special packing provision, "large fire extinguishers" means fire extinguishers as described in indents (c) to (e) of special provision 225 of Chapter 3.3.".

4.1.4.1, P003 Under "Special packing provision specific to RID and ADR:", replace "provision" by "provisions" and add a new special packing provision RR9 to read as follows:

"RR9 For UN 3509, packagings are not required to meet the requirements of 4.1.1.3.

Packagings meeting the requirements of 6.1.4, made leak tight or fitted with a leak tight and puncture resistant sealed liner or bag, shall be used.

When the only residues contained are solids which are not liable to become liquid at temperatures likely to be encountered during carriage, flexible packagings may be used.

When liquid residues are present, rigid packagings that provide a means of retention (e.g. absorbent material) shall be used.

Before being filled and handed over for carriage, every packaging shall be inspected to ensure that it is free from corrosion, contamination or other damage. Any packaging showing signs of reduced strength shall no longer be used (minor dents and scratches are not considered as reducing the strength of the packaging).

Packagings intended for the carriage of packagings, discarded, empty, uncleaned with residues of Class 5.1 shall be so constructed or adapted that the goods cannot come into contact with wood or any other combustible material.".

4.1.4.1, P116 In the column for "outer packagings", amend the first entry for "bags" to read: "woven plastics (5H1, 5H2, 5H3)". Delete special packing provision PP65 and insert "PP65 *(Deleted)*".

4.1.4.1, P131 and P137 In the entry for "boxes", in the column for "outer packagings" add: "plastics, solid (4H2)".

4.1.4.1, P200 Amend the second sentence to read as follows:

"Cylinders, tubes, pressure drums and bundles of cylinders are authorised provided the special packing provisions of **4.1.6**, the provisions listed below under (1) to (9) and, when referred to in the column "Special packing provisions" of tables 1, 2 or 3, the relevant special packing provisions listed below under (10), are met.".

4.1.4.1, P200 (10), in "Periodic inspection" after "u" Insert a new "ua" to read as follows:

"ua: The interval between periodic tests may be extended to 15 years for aluminium alloy cylinders and bundles of such cylinders if the provisions of paragraph (13) of this packing

instruction are applied. This shall not apply to cylinders made from aluminium alloy AA 6351. For mixtures, this provision "ua" may be applied provided all the individual gases in the mixture have been allocated "ua" in Table 1 or Table 2.".

4.1.4.1, P200 (10), in "Periodic inspection" after "v" Insert a new "va" to read as follows:

"va: For seamless steel cylinders which are equipped with residual pressure valves (RPVs) (see note below) that have been designed and tested in accordance with EN ISO 15996:2005 + A1:2007 and for bundles of seamless steel cylinders equipped with main valve(s) with a residual pressure device, tested in accordance with EN ISO 15996:2005 + A1:2007, the interval between periodic tests may be extended to 15 years if the provisions of paragraph (13) of this packing instruction are applied. For mixtures, this provision "va" may be applied provided all the individual gases in the mixture have been allocated "va" in Table 1 or Table 2.

NOTE: *"Residual Pressure Valve" (RPV) means a closure which incorporates a residual pressure device that prevents ingress of contaminants by maintaining a positive differential between the pressure within the cylinder and the valve outlet. In order to prevent back-flow of fluids into the cylinder from a higher pressure source a "Non-Return Valve" (NRV) function shall either be incorporated into the residual pressure device or be a discrete additional device in the cylinder valve, e.g. a regulator.*".

4.1.4.1, P200 (11) At the end of the table, insert the following new standard:

(10) p	EN ISO 13088:2012	Gas cylinders - Acetylene cylinder bundles - Filling conditions and filling inspection (ISO 13088:2011)

4.1.4.1 P200 (12) In paragraph 3.4, replace "or EN 13153:2001 + A1:2003" by ", EN 13153:2001 + A1:2003, EN ISO 14245:2010 or EN ISO 15995:2010".

4.1.4.1, P200 Add a new paragraph (13) to read as follows:

"(13) An interval of 15 years for the periodic inspection of seamless steel and aluminium alloy cylinders and bundles of such cylinders may be granted in accordance with special packing provisions ua or va of paragraph (10), if the following provisions are applied:

1. General provisions

1.1 For the application of this paragraph, the competent authority shall not delegate its tasks and duties to Xb bodies (inspection bodies of type B) or IS bodies (in-house inspection services).

1.2 The owner of the cylinders or bundles of cylinders shall apply to the competent authority for granting the 15 year interval, and shall demonstrate that the requirements of sub-paragraphs 2, 3 and 4 are met.

1.3 Cylinders manufactured since 1 January 1999 shall have been manufactured in conformity with one of the following standards:

- EN 1964-1 or EN 1964-2; or

- EN 1975; or

- EN ISO 9809-1 or EN ISO 9809-2; or

- Annex I, parts 1 to 3 to Council Directive 84/525/EEC[b] and 84/526/EEC[c]

as applicable at the time of manufacture (see also the table in 6.2.4.1).

Other cylinders manufactured before 1 January 2009 in conformity with ADR in accordance with a technical code accepted by the national competent authority may be accepted for a 15 year interval for periodic inspection, if they are of equivalent safety to the provisions of ADR as applicable at the time of application.

NOTE: *This provision is considered to be fulfilled if the cylinder has been reassessed according to the procedure for the reassessment of conformity described in Annex III of Directive 2010/35/EU of 16 June 2010 or Annex IV, Part II, of Directive 1999/36/EC of 29 April 1999.*

Cylinders and bundles of cylinders marked with the United Nations packaging symbol specified in 6.2.2.7.2 (a) shall not be granted a 15 year interval for periodic inspection.

1.4 Bundles of cylinders shall be constructed such that contact between cylinders along the longitudinal axis of the cylinders does not result in external corrosion. The supports and restraining straps shall be such as to minimise the risk of corrosion to the cylinders. Shock absorbent materials used in supports shall only be allowed if they have been treated to eliminate water absorption. Examples of suitable materials are water resistant belting and rubber.

1.5 The owner shall submit documentary evidence to the competent authority demonstrating that the cylinders comply with the provisions of sub-paragraph 1.3. The competent authority shall verify that these conditions are met.

1.6 The competent authority shall check whether the provisions of sub-paragraphs 2 and 3 are fulfilled and correctly applied. If all provisions are fulfilled, it shall authorise the 15 year interval for periodic inspection for the cylinders or bundles of cylinders. In this authorisation a group of cylinders (see NOTE below) covered shall be clearly identified. The authorisation shall be delivered to the owner; the competent authority shall keep a copy. The owner shall keep the documents for as long as the cylinders are authorised for a 15 year interval.

NOTE: *A group of cylinders is defined by the production dates of identical cylinders for a period, during which the applicable provisions of ADR and of the technical code accepted by the competent authority have not changed in their technical content. Example: Cylinders of identical design and volume having been manufactured according to the provisions of ADR applicable between 1 January 1985 and 31 December 1988 in combination with a technical code accepted by the competent authority applicable for the same period form one group in terms of the provisions of this paragraph.*

1.7 The owner shall ensure compliance with the provisions of ADR and the authorisation given as appropriate and shall demonstrate this to the competent authority on request but at least every three years or when significant changes to the procedures are introduced.

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[b] *Council Directive on the approximation of the laws of the Member States relating to seamless, steel gas cylinders, published in the Official Journal of the European Communities No. L 300 of 19.11.1984.*

[c] *Council Directive on the approximation of the laws of the Member States relating to seamless, unalloyed aluminium and aluminium alloy gas cylinders, published in the Official Journal of the European Communities No. L 300 of 19.11.1984.*

2. Operational provisions

2.1 Cylinders or bundles of cylinders having been granted a 15 year interval for periodic inspection shall only be filled in filling centres applying a documented and certified quality system to ensure that all the provisions of paragraph (7) of this packing instruction and the requirements and responsibilities of EN 1919:2000, EN 1920:2000 or EN 13365:2002 as applicable are fulfilled and correctly applied. The quality system, according to the ISO 9000 (series) or equivalent, shall be certified by an accredited independent body recognized by the competent authority. This includes procedures for pre- and post-fill inspections and the filling process for cylinders, bundles of cylinders and valves.

2.2 Aluminium alloy cylinders and bundles of such cylinders without RPVs having been granted a 15 year interval for periodic inspection shall be checked prior to every fill in accordance with a documented procedure which shall at least include the following:

- Open the cylinder valve or the main valve of the bundle of cylinders to check for residual pressure;
- If gas is emitted, the cylinder or bundle of cylinders may be filled;
- If no gas is emitted, the internal condition of the cylinder or bundle of cylinders shall be checked for contamination;
- If no contamination is detected, the cylinder or bundle of cylinders may be filled.
- If contamination is detected corrective action is to be carried out.

2.3 Seamless steel cylinders fitted with RPVs and bundles of seamless steel cylinders equipped with main valve(s) with a residual pressure device having been granted a 15 year interval for periodic inspection shall be checked prior to every fill in accordance with a documented procedure which shall at least include the following:

- Open the cylinder valve or bundle of cylinders main valve to check for residual pressure;
- If gas is emitted, the cylinder or bundle of cylinders may be filled;
- If no gas is emitted the functioning of the residual pressure device shall be checked;
- If the check shows that the residual pressure device has retained pressure the cylinder or bundle of cylinders may be filled;
- If the check shows that the residual pressure device has not retained pressure, the internal condition of the cylinder or bundle of cylinders shall be checked for contamination:
  - If no contamination is detected, the cylinder or bundle of cylinders may be filled following repair or replacement of the residual pressure device;
  - If contamination is detected, a corrective action shall be carried out.

2.4 To prevent internal corrosion, only gases of high quality with very low potential contamination shall be filled into cylinders or bundles of cylinders. This is deemed to be fulfilled, if the compatibility of gases/material is acceptable in accordance with EN ISO 11114-1:2012 and EN 11114-2:2013, and the gas quality meets the specifications in EN ISO 14175:2008 or, for gases not covered in the standard, a minimum purity of 99.5% by volume and a maximum moisture content of 40 ml/m^3(ppm). For nitrous oxide the values shall be a minimum purity of 98% by volume and a maximum moisture content of 70 ml/m^3 (ppm).

2.5 The owner shall ensure that the requirements of 2.1 to 2.4 are fulfilled and provide documentary evidence of this to the competent authority on request, but at least every three years or when significant changes to the procedures are introduced.

2.6 If a filling centre is situated in a different Contracting Party to ADR, the owner shall provide to the competent authority, on request, additional documentary evidence that the filling centre is monitored accordingly by the competent authority of that Contracting Party to ADR. See also 1.2.

3. Provisions for qualification and periodic inspection

3.1 Cylinders and bundles of cylinders already in use, for which the conditions of sub-paragraph 2 have been met from the date of the last periodic inspection to the satisfaction of the competent authority, may have their inspection period extended to 15 years from the date of the last periodic inspection. Otherwise the change of test period from ten to fifteen years shall be made at the time of periodic inspection. The periodic inspection report shall indicate that this cylinder or bundle of cylinders shall be fitted with a residual pressure device as appropriate. Other documentary evidence may be accepted by the competent authority.

3.2 If a cylinder with a 15 year interval fails the pressure test by bursting or leakage or if a severe defect is detected by a non-destructive test (NDT) during a periodic inspection the owner shall investigate and produce a report on the cause of the failure and if other cylinders (e.g. of the same type or group) are affected. In the latter case, the owner shall inform the competer authority. The competent authority shall then decide on appropriate measures and inform the competent authorities of all other Contracting Parties to ADR accordingly.

3.3 If internal corrosion and other defects as defined in the periodic inspection standards referenced in 6.2.4 have been detected, the cylinder shall be withdrawn from use and shall not be granted any further period for filling and carriage.

3.4 Cylinders or bundles of cylinders having been granted a 15 year interval for periodic inspection shall only be fitted with valves designed and tested according to EN 849 or EN ISO 10297 as applicable at the time of manufacture (see also the table in 6.2.4.1). After a periodic inspection a new valve shall be fitted, except that valves which have been refurbished or inspected according to EN ISO 22434:2011 may be re-fitted.

4. Marking

Cylinders and bundles of cylinders having been granted a 15 year interval for periodic inspection in accordance with this paragraph shall have the date (year) of the next periodic inspection as required in section 5.2.1.6 (c) and at the same time additionally be marked clearly and legibly with "P15Y". This marking shall be removed if the cylinder or bundle of cylinders is no longer authorised for a 15 year interval for periodic inspection.".

4.1.4.1, P200 In Table 2, for UN No. 1082, in column "Name and description", add "(REFRIGERANT GAS R1113)".

4.1.4.1, P200, Table 1, for UN Nos. 1002, 1006, 1046, 1049, 1056, 1065, 1066, 1072, 1954, 1956, 1957, 1964, 1971, 2034 and 3156 Insert "ua, va" in the column for "Special packing provisions".

4.1.4.1, P200, Table 2, for UN Nos. 1013, 1070 and 1080 Insert "ua, va" in the column for "Special packing provisions" against all filling ratio values.

4.1.4.1, P200, Table 2, for UN 1058, delete "Test pressure = 1.5 x working pressure" in the columns for "Test pressure" and "Filling ratio".

4.1.4.1, P203 Existing text of paragraph (8) under "Requirements for closed cryogenic receptacles" becomes sub-paragraph (a)" in front of the existing provision and add the following new sub-paragraph (b):

"(b) The periodic inspection and test frequencies of non-UN closed cryogenic receptacles in accordance with 6.2.3.5.2 shall not exceed 10 years.".

4.1.4.1, P208 Renumber as P209.

4.1.4.1, P404 (1) Amend to read as follows:

(1)	**Combination packagings**	
	Outer packagings:	(1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G or 4H2)
	Inner packagings:	Metal receptacles with a maximum net mass of 15 kg each. Inner packagings shall be hermetically sealed and have threaded closures; Glass receptacles, with a maximum net mass of 1 kg each, having threaded closures with gaskets, cushioned on all sides and contained in hermetically sealed metal cans.
	Outer packagings shall have a maximum net mass of 125 kg.	

4.1.4.1, P501, P502 and P504 Under "Composite packagings", amend the last entry to read as follows:

"Glass receptacle with outer steel, aluminium, fibre or plywood drum (6PA1, 6PB1, 6PD1 or 6PG1) or with outer steel, aluminium, wooden or fibreboard box or with outer wickerwork hamper (6PA2, 6PB2, 6PC, 6PG2 or 6PD2) or with outer solid or expanded plastics packaging (6PH1 or 6PH2).".

4.1.4.1, P601 (2) and P602 (2) At the beginning, insert "or plastics" after "consisting of metal".

4.1.4.1, P650 Amend the mark in paragraph (4) to read as follows:

4.1.4.1, P802 (3) Amend to read as follows:

"(3) Composite packagings: Glass receptacle with outer steel, aluminium or plywood drum (6PA1, 6PB1 or 6PD1) or with outer steel, aluminium or wooden box or with outer wickerwork hamper (6PA2, 6PB2, 6PC or 6PD2) or with outer solid plastics packaging (6PH2); maximum capacity: 60 litres.".

4.1.4.1, P804 The correction does not apply to the English text.

4.1.4.1, P901 After "(see special provision 251 of Chapter 3.3).", insert the following new sentence: "Where the kit contains only dangerous goods to which no packing group is assigned, packagings shall meet the packing group II performance level.".

4.1.4.1, P903a and P903b Amend to read as follows:

P903a	PACKING INSTRUCTION	P903a
	(Deleted)	

P903b	PACKING INSTRUCTION	P903b
	(Deleted)	

4.1.4.1, P904 Amend the mark to read as follows:

4.1.4.1, P906 (2) Amend to read as follows:

"(2) For transformers and condensers and other devices:

(a) Packagings in accordance with packing instructions P001 or P002. The articles shall be secured with suitable cushioning material to prevent inadvertent movement during normal conditions of carriage; or

(b) Leakproof packagings which are capable of containing, in addition to the devices, at least 1.25 times the volume of the liquid PCBs, polyhalogenated biphenyls or terphenyls present in them. There shall be sufficient absorbent material in the packagings to absorb at least 1.1 times the volume of liquid which is contained in the devices. In general, transformers and condensers shall be carried in leakproof metal packagings which are capable of holding, in addition to the transformers and condensers, at least 1.25 times the volume of the liquid present in them.".

4.1.4.1 Insert the following new packing instructions:

P208	PACKING INSTRUCTION	P208

This instruction applies to Class 2 adsorbed gases.

(1) The following packagings are authorized provided the general packing requirements of 4.1.6.1 are met:

Cylinders specified in Chapter 6.2 and in accordance with ISO 11513:2011 or ISO 9809-1:2010.

(2) The pressure of each filled cylinder shall be less than 101.3 kPa at 20 °C and less than 300 kPa at 50 °C.

(3) The minimum test pressure of the cylinder shall be 21 bar.

(4) The minimum burst pressure of the cylinder shall be 94.5 bar.

(5) The internal pressure at 65 °C of the filled cylinder shall not exceed the test pressure of the cylinder.

(6) The adsorbent material shall be compatible with the cylinder and shall not form harmful or dangerous compounds with the gas to be adsorbed. The gas in combination with the adsorbent material shall not affect or weaken the cylinder or cause a dangerous reaction (e.g. a catalyzing reaction).

(7) The quality of the adsorbent material shall be verified at the time of each fill to ensure that the pressure and chemical stability requirements of this packing instruction are met each time an adsorbed gas package is offered for carriage.

(8) The adsorbent material shall not meet the criteria of any of the classes in ADR.

(9) Requirements for cylinders and closures containing toxic gases with an LC_{50} less than or equal to 200 ml/m^3 (ppm) (see Table 1) shall be as follows:

(a) Valve outlets shall be fitted with pressure retaining gas-tight plugs or caps having threads matching those of the valve outlets.

(b) Each valve shall either be of the packless type with non-perforated diaphragm, or be of a type which prevents leakage through or past the packing.

(c) Each cylinder and closure shall be tested for leakage after filling.

(d) Each valve shall be capable of withstanding the test pressure of the cylinder and be directly connected to the cylinder by either a taper-thread or other means which meets the requirements of ISO 10692-2:2001.

(e) Cylinders and valves shall not be fitted with a pressure relief device.

(10) Valve outlets for cylinders containing pyrophoric gases shall be fitted with gas-tight plugs or caps having threads matching those of the valve outlets.

(11) The filling procedure shall be in accordance with Annex A of ISO 11513:2011.

(12) The maximum period for periodic inspections shall be 5 years.

(13) Special packing provisions that are specific to a substance (see Table 1).

Material compatibility

a: Aluminium alloy cylinders shall not be used.

d: When steel cylinders are used, only those bearing the "H" mark in accordance with 6.2.2.7.4 (p) are permitted.

Gas specific provisions

r: The filling of this gas shall be limited such that, if complete decomposition occurs, the pressure does not exceed two thirds of the test pressure of the cylinder.

Material compatibility for n.o.s. adsorbed gas entries

z: The construction materials of the cylinders and their accessories shall be compatible with the contents and shall not react to form harmful or dangerous compounds therewith.

P208	PACKING INSTRUCTION			P208
Table 1: ADSORBED GASES				
UN No.	Name and description	Classification code	LC_{50} ml/m^3	Special packing provisions
3510	ADSORBED GAS, FLAMMABLE, N.O.S.	9F		z
3511	ADSORBED GAS, N.O.S.	9A		z
3512	ADSORBED GAS, TOXIC, N.O.S.	9T	≤ 5000	z
3513	ADSORBED GAS, OXIDIZING, N.O.S.	9O		z
3514	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	9TF	≤ 5000	z
3515	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	9TO	≤ 5000	z
3516	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	9TC	≤ 5000	z
3517	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	9TFC	≤ 5000	z
3518	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	9TOC	≤ 5000	z
3519	BORON TRIFLUORIDE, ADSORBED	9TC	387	a
3520	CHLORINE, ADSORBED	9TOC	293	a
3521	SILICON TETRAFLUORIDE, ADSORBED	9TC	450	a
3522	ARSINE, ADSORBED	9TF	20	d
3523	GERMANE, ADSORBED	9TF	620	d, r
3524	PHOSPHORUS PENTAFLUORIDE, ADSORBED	9TC	190	
3525	PHOSPHINE, ADSORBED	9TF	20	d
3526	HYDROGEN SELENIDE, ADSORBED	9TF	2	

P505	PACKING INSTRUCTION	P505
This instruction applies to UN No. 3375.		
The following packagings are authorized, provided that the general provisions of **4.1.1** and **4.1.3** are met:		
Combination packagings:	**Inner packaging maximum capacity**	**Outer packaging maximum net mass**
Boxes (4B, 4C1, 4C2, 4D, 4G, 4H2) or drums (1B2, 1G, 1N2, 1H2, 1D) or jerricans (3B2, 3H2) with glass, plastics or metal inner packagings	5 l	125 kg
Single packagings:	**Maximum capacity**	
Drums		
aluminium (1B1, 1B2)	250 l	
plastics (1H1, 1H2)	250 l	
Jerricans:		
aluminium (3B1, 3B2)	60 l	
plastics (3H1, 3H2)	60 l	
Composite packagings:		
plastics receptacle with outer aluminium drum (6HB1)	250 l	
plastics receptacle with outer fibre, plastics or plywood drum (6HG1, 6HH1, 6HD1)	250 l	
plastics receptacle with outer aluminium crate or box or plastics receptacle with outer wooden, plywood, fibreboard or solid plastics box (6HB2, 6HC, 6HD2, 6HG2 or 6HH2)	60 l	
glass receptacle with outer aluminium, fibre or plywood drum (6PB1, 6PG1, 6PD1) or with outer expanded or solid plastics plastics receptacles (6PH1 or 6PH2) or with outer aluminium crate or box or with outer wooden or fibreboard box or with outer wickerwork hamper (6PB2, 6PC, 6PG2 or 6PD2)	60 l	

P805	PACKING INSTRUCTION	P805

This instruction applies to UN 3507.

The following packagings are authorized provided that the general provisions of **4.1.1** and **4.1.3** and the special packing provisions of **4.1.9.1.2, 4.1.9.1.4** and **4.1.9.1.7** are met:

Packagings consisting of:

(a) Metal or plastics primary receptacle(s); in

(b) Leakproof rigid secondary packaging(s); in

(c) A rigid outer packaging:

Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);

Boxes (4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);

Jerricans (3A2, 3B2, 3H2).

Additional requirements:

1. Primary inner receptacles shall be packed in secondary packagings in a way that, under normal conditions of carriage, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings shall be secured in outer packagings with suitable cushioning material to prevent movement. If multiple primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated so as to prevent contact between them.

2. The contents shall comply with the provisions of 2.2.7.2.4.5.2.

3. The provisions of 6.4.4 shall be met.

Special packing provision:

In the case of fissile-excepted material, limits specified in 2.2.7.2.3.5 and 6.4.11.2 shall be met.

P908	PACKING INSTRUCTION	P908
This instruction applies to damaged or defective lithium ion cells and batteries and damaged or defective lithium metal cells and batteries, including those contained in equipment, of UN Nos. 3090, 3091, 3480 and 3481.		
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met: For cells and batteries and equipment containing cells and batteries: Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G) Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2) Jerricans (3A2, 3B2, 3H2) Packagings shall conform to the packing group II performance level. 1. Each damaged or defective cell or battery or equipment containing such cells or batteries shall be individually packed in inner packaging and placed inside an outer packaging. The inner packaging or outer packaging shall be leak-proof to prevent the potential release of electrolyte. 2. Each inner packaging shall be surrounded by sufficient non-combustible and non-conductive thermal insulation material to protect against a dangerous evolution of heat. 3. Sealed packagings shall be fitted with a venting device when appropriate. 4. Appropriate measures shall be taken to minimize the effects of vibrations and shocks, prevent movement of the cells or batteries within the package that may lead to further damage and a dangerous condition during carriage. Cushioning material that is non-combustible and non-conductive may also be used to meet this requirement. 5. Non combustibility shall be assessed according to a standard recognized in the country where the packaging is designed or manufactured. For leaking cells or batteries, sufficient inert absorbent material shall be added to the inner or outer packaging to absorb any release of electrolyte. A cell or battery with a net mass of more than 30 kg shall be limited to one cell or battery per outer packaging.		
Additional requirement: Cells or batteries shall be protected against short circuit.		

P909	PACKING INSTRUCTION	P909

This instruction applies to UN Nos. 3090, 3091, 3480 and 3481 carried for disposal or recycling, either packed together with or packed without non-lithium batteries.

(1) Cells and batteries shall be packed in accordance with the following:

(a) The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3, are met:

Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H2); and
Jerricans (3A2, 3B2, 3H2).

(b) Packagings shall conform to the packing group II performance level.

(c) Metal packagings shall be fitted with a non-conductive lining material (e.g. plastics) of adequate strength for the intended use.

(2) However, lithium ion cells with a Watt-hour rating of not more than 20 Wh, lithium ion batteries with a Watt-hour rating of not more than 100 Wh, lithium metal cells with a lithium content of not more than 1 g and lithium metal batteries with an aggregate lithium content of not more than 2 g may be packed in accordance with the following:

(a) In strong outer packaging up to 30 kg gross mass meeting the general provisions of 4.1.1, except 4.1.1.3, and 4.1.3.

(b) Metal packagings shall be fitted with a non-conductive lining material (e.g. plastics) of adequate strength for the intended use.

(3) For cells or batteries contained in equipment, strong outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use, may be used. Packagings need not meet the requirements of 4.1.1.3. Large equipment may be offered for carriage unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.

(4) In addition, for cells or batteries with a gross mass of 12 kg or more employing a strong, impact resistant outer casing, strong outer packagings constructed of suitable material and of adequate strength and design in relation to the packaging's capacity and its intended use, may be used. Packagings need not meet the requirements of 4.1.1.3.

Additional requirements:

1. Cells and batteries shall be designed or packed to prevent short circuits and the dangerous evolution of heat.
2. Protection against short circuits and the dangerous evolution of heat includes, but is not limited to:

-individual protection of the battery terminals,

-inner packaging to prevent contact between cells and batteries,

-batteries with recessed terminals designed to protect against short circuits, or

-the use of a non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.

3. Cells and batteries shall be secured within the outer packaging to prevent excessive movement during carriage (e.g. by using a non-combustible and non-conductive cushioning material or through the use of a tightly closed plastics bag).

4.1.4.2 In IBC02, insert the following new special provision B16:

"B16 For UN No. 3375, IBCs of type 31A and 31N are not allowed without competent authority approval.".

4.1.4.2 In IBC04 Replace "and 21N" by ", 21N, 31A, 31B and 31N".

4.1.4.2 In IBC05 (1) Replace "and 21N" by ", 21N, 31A, 31B and 31N".

4.1.4.2 In IBC05 (2) Replace "and 21H2" by ", 21H2, 31H1 and 31H2".

4.1.4.2 In IBC05 (3) Replace "and 21HZ1" by ", 21HZ1 and 31HZ1".

4.1.4.2 In IBC06 (1), IBC07 (1) and IBC08 (1) Replace "and 21N" by ", 21N, 31A, 31B and 31N".

4.1.4.2 In IBC06 (2), IBC07 (2) and IBC08 (2) Replace "and 21H2" by ", 21H2, 31H1 and 31H2".

4.1.4.2 In IBC06 (3), IBC07 (3) and IBC08 (3) Replace "and 21HZ2" by ", 21HZ2 and 31HZ1".

4.1.4.2, IBC08 At the end, add: "Special packing provision specific to RID and ADR

BB3 For UN 3509, IBCs are not required to meet the requirements of 4.1.1.3.

IBCs meeting the requirements of 6.5.5, made leak tight or fitted with a leak tight and puncture resistant sealed liner or bag, shall be used.

When the only residues are solids which are not liable to become liquid at temperatures likely to be encountered during carriage, flexible IBCs may be used.

When liquid residues are present, rigid IBCs that provide a means of retention (e.g. absorbent material) shall be used.

Before being filled and handed over for carriage, every IBC shall be inspected to ensure that it is free from corrosion, contamination or other damage. Any IBC showing signs of reduced strength, shall no longer be used (minor dents and scratches are not considered as reducing the strength of the IBC).

IBCs intended for the carriage of packagings, discarded, empty, uncleaned with residues of Class 5.1 shall be so constructed or adapted that the goods cannot come into contact with wood or any other combustible material.".

IBC100 In the first line of packing instruction IBC100, insert "0222," after "0082,". Insert the following special packing provisions:

"B3 For UN No. 0222, flexible IBCs shall be sift-proof and water resistant or shall be fitted with a sift-proof and water resistant liner."

"B17 For UN No. 0222, metal IBCs are not authorized."

4.1.4.3, LP02 At the end, add: "**Special packing provision specific to RID and ADR:**

LL1 For UN 3509, large packagings are not required to meet the requirements of 4.1.1.3.

Large packagings meeting the requirements of 6.6.4, made leak tight or fitted with a leak tight and puncture resistant sealed liner or bag, shall be used.

When the only residues are solids which are not liable to become liquid at temperatures likely to be encountered during carriage, flexible large packagings may be used.

When liquid residues are present, rigid large packagings that provide a means of retention (e.g. absorbent material) shall be used.

Before being filled and handed over for carriage, every large packaging shall be inspected to ensure that it is free from corrosion, contamination or other damage. Any large packaging showing signs of reduced strength, shall no longer be used (minor dents and scratches are not considered as reducing the strength of the large packaging).

Large packagings intended for the carriage of packagings, discarded, empty, uncleaned with residues of Class 5.1 shall be so constructed or adapted that the goods cannot come into contact with wood or any other combustible material.".

4.1.4.3 Insert the following new packing instructions:

LP903	**PACKING INSTRUCTION**	**LP903**
This instruction applies to UN Nos. 3090, 3091, 3480 and 3481.		
The following large packagings are authorized for a single battery, including for a battery contained in equipment, provided that the general provisions of **4.1.1** and **4.1.3** are met: Rigid large packagings conforming to the packing group II performance level, made of: steel (50A); aluminium (50B); metal other than steel or aluminium (50N); rigid plastics (50H); natural wood (50C); plywood (50D); reconstituted wood (50F); rigid fibreboard (50G). The battery shall be packed so that the battery is protected against damage that may be caused by its movement or placement within the large packaging.		
Additional requirement: Batteries shall be protected against short circuit.		

LP904	PACKING INSTRUCTION	LP904
This instruction applies to single damaged or defective batteries of UN Nos. 3090, 3091, 3480 and 3481, including those contained in equipment.		
The following large packagings are authorized for a single damaged or defective battery and for a single damaged or defective battery contained in equipment, provided the general provisions of 4.1.1 and 4.1.3 are met For batteries and equipment containing batteries, large packagings made of: steel (50A) aluminium (50B) metal other than steel or aluminium (50N) rigid plastics (50H) plywood (50D) Packagings shall conform to the packing group II performance level. 1. Each damaged or defective battery or equipment containing such a battery shall be individually packed in an inner packaging and placed inside an outer packaging. The inner packaging or outer packaging shall be leak-proof to prevent the potential release of electrolyte. 2. Each inner packaging shall be surrounded by sufficient non-combustible and non-conductive thermal insulation material to protect against a dangerous evolution of heat. 3. Sealed packagings shall be fitted with a venting device when appropriate. 4. Appropriate measures shall be taken to minimize the effects of vibrations and shocks, prevent movement of the battery within the package that may lead to further damage and a dangerous condition during carriage. Cushioning material that is non-combustible and non-conductive may also be used to meet this requirement. 5. Non combustibility shall be assessed according to a standard recognized in the country where the packaging is designed or manufactured. For leaking batteries, sufficient inert absorbent material shall be added to the inner or outer packaging to absorb any release of electrolyte.		
Additional requirement: Batteries shall be protected against short circuit.		

4.1.6.15 Replace "ISO 11114-1:1997" by "ISO 11114-1:2012". In the title of the standard, replace "Transportable gas cylinders" by "Gas cylinders".

4.1.6.15 In the Table, after standard "EN 13153:2001 + A1:2003", insert the following standards:

Applicable paragraphs	Reference	Document title
4.1.6.8 Valves with inherent protection	EN ISO 14245:2010	Gas cylinders – Specifications and testing of LPG cylinder valves – Self closing (ISO 14245:2006)
	EN ISO 15995:2010	Gas cylinders – Specifications and testing of LPG cylinder valves – Manually operated (ISO 15995:2006)

Amendments to Table in 4.1.6.15, for 4.1.6.8 (b) and (c) do not apply to the English text.

4.1.9 Amend the title to read:

"4.1.9 Special packing provisions for radioactive material".

4.1.9.1.3 Delete ", other than an excepted package,".

4.1.9.1.6 Amend the introductory sentence to read as follows: "Before a packaging is first used to carry radioactive material, it shall be confirmed that it has been manufactured

in conformity with the design specifications to ensure compliance with the relevant provisions of ADR and any applicable certificate of approval. The following requirements shall also be fulfilled, if applicable:".

4.1.9.1.6 In (a), replace "package" by "packaging".

4.1.9.1.6 In (b) amend the beginning of the sentence to read as follows: "For each packaging intended for use as a Type B(U), Type B(M) or Type C package and for each packaging intended to contain fissile material...".

4.1.9.1.6 Amend (c) to read as follows:

"(c) For each packaging intended to contain fissile material, it shall be ensured that the effectiveness of the criticality safety features is within the limits applicable to or specified for the design and in particular where, in order to comply with the requirements of 6.4.11.1 neutron poisons are specifically included, checks shall be performed to confirm the presence and distribution of those neutron poisons.".

4.1.9.1.7 Insert a new paragraph to read as follows:

"4.1.9.1.7 Before each shipment of any package, it shall be ensured that the package contains neither:

(a) Radionuclides different from those specified for the package design; nor

(b) Contents in a form, or physical or chemical state different from those specified for the package design."

Current paragraphs 4.1.9.1.7 to 4.1.9.1.11 become new paragraphs 4.1.9.1.8 to 4.1.9.1.12.

4.1.9.1.8 (former 4.1.9.1.7) Amend to read as follows:

"4.1.9.1.8 Before each shipment of any package, it shall be ensured that all the requirements specified in the relevant provisions of ADR and in the applicable certificates of approval have been fulfilled. The following requirements shall also be fulfilled, if applicable:

(a) It shall be ensured that lifting attachments which do not meet the requirements of 6.4.2.2 have been removed or otherwise rendered incapable of being used for lifting the package, in accordance with 6.4.2.3;

(b) Each Type B(U), Type B(M) and Type C package shall be held until equilibrium conditions have been approached closely enough to demonstrate compliance with the requirements for temperature and pressure unless an exemption from these requirements has received unilateral approval;

(c) For each Type B(U), Type B(M) and Type C package, it shall be ensured by inspection and/or appropriate tests that all closures, valves and other openings of the containment system through which the radioactive contents might escape are properly closed and, where appropriate, sealed in the manner for which the demonstrations of compliance with the requirements of 6.4.8.8 and 6.4.10.3 were made;

(d) For packages containing fissile material the measurement specified in 6.4.11.5 (b) and the tests to demonstrate closure of each package as specified in 6.4.11.8 shall be performed.".

4.1.9.2.2 Amend to read as follows:

"4.1.9.2.2 For LSA material and SCO which are or contain fissile material, which is not excepted under 2.2.7.2.3.5, the applicable requirements of 7.5.11, CV33 (4.1) and (4.2) shall be met.".

4.1.9.2.3 Insert a new paragraph 4.1.9.2.3 to read as follows:

"4.1.9.2.3 For LSA material and SCO which are or contain fissile material, the applicable requirements of 6.4.11.1 shall be met.".

Current paragraphs 4.1.9.2.3 and 4.1.9.2.4 become new paragraphs 4.1.9.2.4 and 4.1.9.2.5 respectively.

4.1.9.2.4 (former 4.1.9.2.3) In (b), delete "and" at the end.

Add a new sub-paragraph (d) to read as follows:

"(d) Unpackaged fissile material shall meet the requirements of 2.2.7.2.3.5 (e).".

4.1.9.2.5 (former 4.1.9.2.4) Replace "4.1.9.2.3" by "4.1.9.2.4".

4.1.9.2.5 (former 4.1.9.2.4) Before the title of the Table, insert "**Table 4.1.9.2.5:**".

Table 4.1.9.2.5 In note "a" under the table replace "4.1.9.2.3" by "4.1.9.2.4".

4.1.9.3 Amend to read as follows:

"**4.1.9.3** ***Packages containing fissile material***

The contents of packages containing fissile material shall be as specified for the package design either directly in ADR or in the certificate of approval.".

Chapter 4.2

4.2.5.2.6 Amend the header to the tabulated portable tank instructions for T1 – T22 to read as follows:

"These portable tank instructions apply to liquid and solid substances of Class 1 and Classes 3 to 9. The general provisions of Section 4.2.1 and the requirements of Section 6.7.2 shall be met.".

4.2.5.2.6 In tank instruction T23, at the end of footnote d add: ""*CORROSIVE*" *subsidiary risk placard required (Model No 8, see 5.2.2.2.2).*".

4.2.5.3 In special provision TP32, paragraph (b), at the beginning, insert "For UN 3375 only,".

4.2.5.3 Add the following new portable tank special provision:

"TP41 With the agreement of the competent authority, the 2.5 year internal examination may be waived or substituted by other test methods or inspection procedures, provided that the portable tank is dedicated to the carriage of the organometallic substances to which this tank special provision is assigned. However this examination is required when the conditions of 6.7.2.19.7 are met.".

Chapter 4.3

4.3.2.2.1 Amend to read as follows:

"4.3.2.2.1 The following degrees of filling shall not be exceeded in tanks intended for the carriage of liquids at ambient temperatures:

(a) for flammable substances, environmentally hazardous substances and flammable environmentally hazardous substances, without additional risks (e.g. toxicity or corrosivity), in tanks with a breather device or with safety valves (even where preceded by a bursting disc):

$$\text{Degree of filling} = \frac{100}{1 + \alpha (50 - t_F)} \text{ \% of capacity}$$

(b) for toxic or corrosive substances (whether flammable or environmentally hazardous or not) in tanks with a breather device or with safety valves (even where preceded by a bursting disc):

$$\text{Degree of filling} = \frac{98}{1 + \alpha (50 - t_F)} \text{ \% of capacity}$$

(c) for flammable substances, environmentally hazardous substances and slightly toxic or corrosive substances (whether flammable or environmentally hazardous or not) in hermetically closed tanks without a safety device:

$$\text{Degree of filling} = \frac{97}{1 + \alpha (50 - t_F)} \text{ \% of capacity}$$

(d) for highly toxic, toxic, highly corrosive or corrosive substances (whether flammable or environmentally hazardous or not) in hermetically closed tanks without a safety device:

$$\text{Degree of filling} = \frac{95}{1 + \alpha (50 - t_F)} \text{ \% of capacity ".}$$

4.3.3.2.5 In the Table, for UN No. 1082, in column "Name", add "(Refrigerant gas R1113)".

4.3.4.1.1 For the tank code "V", replace "non-explosion-pressure proof tank" by "non-explosion pressure shock resistant tank". For the tank code "F", replace "explosion-pressure proof tank" by "explosion pressure shock resistant tank".

Chapter 4.5

4.5.1.1 Amend the beginning of the second sentence to read as follows: "Wastes consisting of substances assigned to tank code L4BH in Column (12) of Table A of Chapter 3.2 or to another tank code permitted under the hierarchy in 4.3.4.1.2 may be carried ...", *remainder unchanged.*

4.5.1.2 Add a new 4.5.1.2 to read as follows:

"4.5.1.2 Non waste substances may be carried in vacuum-operated waste tanks under the same conditions as mentioned under 4.5.1.1.".

Chapter 5.1

5.1.2.1 (a) Add the following new sentence at the beginning of the last paragraph (before "The marking of the word..."): "The lettering of the "OVERPACK" marking shall be at least 12 mm high.".

5.1.2.1 Amend paragraph (b) to read as follows:

"(b) Orientation arrows illustrated in 5.2.1.9 shall be displayed on two opposite sides of overpacks containing packages which shall be marked in accordance with 5.2.1.9.1, unless the marking remains visible."

5.1.3.2 Replace "Packagings, including IBCs, and tanks" by "Containers, tanks, IBCs, as well as other packagings and overpacks,".

5.1.5.1.1 In the first sentence replace "for package designs" by "of package designs".

5.1.5.1.4 (c) Replace "for shipment approval" by "for approval of shipment (see 6.4.23.2)".

5.1.5.2.1 In (a), insert a new sub-paragraph (iii) to read as follows:

"(iii) fissile material excepted under 2.2.7.2.3.5 (f);".

Consequently, current sub-paragraphs (iii) to (vi) become new (iv) to (vii).

5.1.5.2.1 In (v) (former (iv)) delete "all" and "replace "6.4.11.2" by "2.2.7.2.3.5, 6.4.11.2 or 6.4.11.3".

5.1.5.2.1 At the end of (c), replace "." by ";".

5.1.5.2.1 Insert new (d) and (e) to read as follows:

"(d) Determination of the basic radionuclide values referred to in 2.2.7.2.2.1 for individual radionuclides which are not listed in Table 2.2.7.2.2.1 (see 2.2.7.2.2.2 (a));

(e) Alternative activity limits for an exempt consignment of instruments or articles (see 2.2.7.2.2.2 (b)).".

5.1.5.2.1 Amend the second paragraph after sub-paragraphs (a) to (e) to read as follows:

"The certificates of approval for the package design and the shipment may be combined into a single certificate.".

5.1.5.2.3 In the first sentence, amend the beginning of the sentence to read: "For package designs where it is not required that a competent authority issue a certificate of approval, the consignor...".

5.1.5.3.4 In the first sentence, replace "and overpacks" by ", overpacks and containers".

5.1.5.3.4 In (a), replace (twice) "or overpack" by ", overpack or container".

5.1.5.3.4 In (e), insert "or container" after "overpack".

Table 5.1 5.3.4 Replace "and overpacks" by ", overpacks and containers".

In note "b" to the table insert at end: "except for containers (see Table D in 7.5.11 CV33 (3.3))".

5.1.5.3.5 Replace "design or shipment approval" by "approval of design or shipment".

5.1.5.4 Amend the title to read "Specific provisions for excepted packages of radioactive material of Class 7".

5.1.5.4.1 After "excepted packages", insert "of radioactive material of Class 7".

5.1.5.4.2 Amend to read as follows:

"5.1.5.4.2 The documentation requirements of Chapter 5.4 do not apply to excepted packages of radioactive material of Class 7, except that:

(a) The UN number preceded by the letters "UN" and the name and address of the consignor and the consignee and, if relevant, the identification mark for each competent authority certificate of approval (see 5.4.1.2.5.1 (g)) shall be shown on a transport document such as a bill of lading, air waybill or CMR or CIM consignment note;

(b) If relevant, the requirements of 5.4.1.2.5.1 (g), 5.4.1.2.5.3 and 5.4.1.2.5.4 shall apply;

(c) The requirements of 5.4.2 and 5.4.4 shall apply.".

5.1.5.4.3 Insert a new paragraph to read as follows:

"5.1.5.4.3 The requirements of 5.2.1.7.8 and 5.2.2.1.11.5 shall apply if relevant.".

5.1.5.5 In the last column of the Table, in the row for "Special form radioactive material", replace "1.6.6.3" by "1.6.6.4".

Chapter 5.2

5.2.1.3 Add the following new sentence at the end:

"The lettering of the "SALVAGE" marking shall be at least 12 mm high.".

5.2.1.7 Replace "for goods of Class 7" by "for radioactive material".

5.2.1.7.1 Insert the following sentence at the end: "Each overpack shall be legibly and durably marked on the outside of the overpack with an identification of either the consignor or consignee, or both unless these markings of all packages within the overpack are clearly visible.".

5.2.1.7.5 Amend the introductory sentence to read as follows:

"Each package which conforms to a design approved under one or more of paragraphs 5.1.5.2.1, 6.4.22.1 to 6.4.22.4, 6.4.23.4 to 6.4.23.7 and 6.4.24.2 shall be legibly and durably marked on the outside of the package with the following information:".

5.2.1.7.5 Amend (c) to read as follows:

"(c) "Type B(U)", "Type B(M)" or "Type C", in the case of a Type B(U), Type B(M) or Type C package design.".

5.2.1.7.5 Delete (d).

5.2.1.7.7 Replace "4.1.9.2.3" by "4.1.9.2.4".

5.2.1.7.8 Replace "competent authority design or shipment approval" by "competent authority approval of design or shipment".

5.2.1.8.3 Amend 5.2.1.8.3 to read as follows:

"5.2.1.8.3 The environmentally hazardous substance mark shall be as shown in Figure 5.2.1.8.3.

Figure 5.2.1.8.3

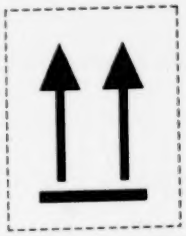
Environmentally hazardous substance mark

The marking shall be in the form of a square set at an angle of 45° (diamond-shaped). The symbol (fish and tree) shall be black on white or suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of the line forming the diamond shall be 2 mm. If the size of the package so requires, the dimensions/line thickness may be reduced, provided the marking remains clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

***NOTE**: The labelling provisions of 5.2.2 apply in addition to any requirement for packages to bear the environmentally hazardous substance mark.*".

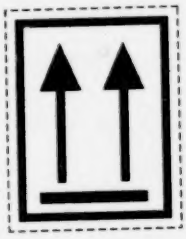
5.2.1.9.1 Number the figures and amend the caption to read as follows:

"**Figure 5.2.1.9.1.1**



or

Figure 5.2.1.9.1.2



Two black or red arrows on white or suitable contrasting background.

The rectangular border is optional.

All features shall be in approximate proportion to those shown.".

5.2.2.1.11.1 Amend the first and second sentences to read as follows:

"Except when enlarged labels are used in accordance with 5.3.1.1.3, each package, overpack and container containing radioactive material shall bear the labels conforming to the applicable models Nos. 7A, 7B or 7C, according to the appropriate category. Labels shall be affixed to two opposite sides on the outside of the package or overpack or on the outside of all four sides of a container or tank.".

5.2.2.1.11.1 In the fourth sentence, for "under 6.4.11.2" read "under the provisions of 2.2.7.2.3.5", replace "which conform to model" by "conforming to model" and replace the last phrase of the fourth sentence by the following: "such labels, where applicable, shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C.".

5.2.2.1.11.2 In the introductory sentence, replace "models numbers 7A, 7B and 7C" by "the applicable model No. 7A, 7B or 7C".

5.2.2.1.11.2 In (b), amend the last sentence to read as follows:

"For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in place of activity;".

5.2.2.1.11.3 Amend to read as follows:

"5.2.2.1.11.3 Each label conforming to the model No. 7E shall be completed with the criticality safety index (CSI) as stated in the certificate of approval applicable in the countries through or into which the consignment is carried and issued by the competent authority or as specified in 6.4.11.2 or 6.4.11.3.".

5.2.2.1.11.4 Amend to read as follows:

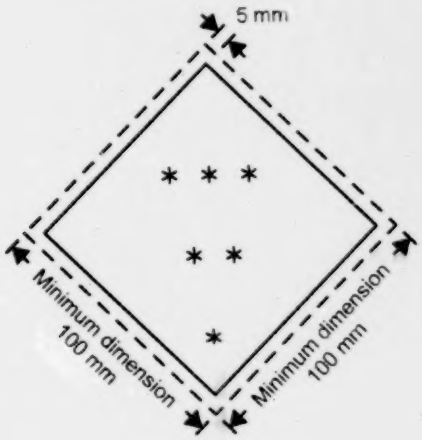
"5.2.2.1.11.4 For overpacks and containers, the label conforming to model No. 7E shall bear the sum of the criticality safety indexes of all the packages contained therein.".

5.2.2.1.11.5 Replace "competent authority design or shipment approval" by "competent authority approval of design or shipment".

5.2.2.2.1.1 Amend to read as follows:

"5.2.2.2.1.1 Labels shall be configured as shown in Figure 5.2.2.2.1.1.

Figure 5.2.2.2.1.1



Class/division label

* The class or for Classes 4.1, 4.2 and 4.3, the figure "4" or for Classes 6.1 and 6.2, the figure "6", shall be shown in the bottom corner.

** Additional text/numbers/letters shall (if mandatory) or may (if optional) be shown in this bottom half.

*** The class symbol or, for divisions 1.4, 1.5 and 1.6, the division number and for Model No 7E the word "FISSILE" shall be shown in this top half.".

5.2.2.2.1.1.1 Labels shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.

5.2.2.2.1.1.2 The label shall be in the form of a square set at an angle of 45° (diamond-shaped). The minimum dimensions shall be 100 mm x 100 mm and the minimum width of

the line inside the edge forming the diamond shall be 2 mm. The line inside the edge shall be parallel and 5 mm from the outside of that line to the edge of the label. The line inside the edge on the upper half of the label shall be the same colour as the symbol and the line inside the edge on the lower half of the label shall be the same colour as the class or division number in the bottom corner. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

5.2.2.2.1.1.3 If the size of the package so requires the dimensions may be reduced, provided the symbols and other elements of the label remain clearly visible. The line inside the edge shall remain 5 mm to the edge of the label. The minimum width of the line inside the edge shall remain 2 mm. Dimensions for cylinders shall comply with 5.2.2.2.1.2.".

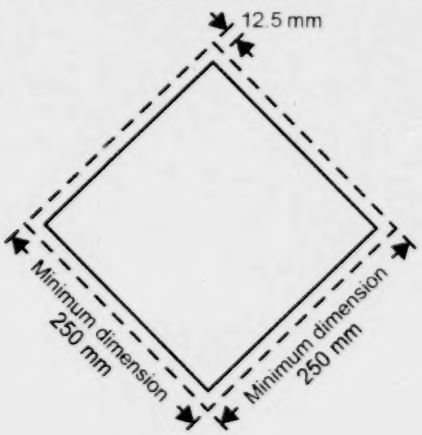
Chapter 5.3

5.3.1.1.3 In the last sentence, replace "the label required" by "the required label of model No. 7A, 7B or 7C". Add the following sentence at the end of the last paragraph: "In that case, the dimensions shall be not less than 250 mm by 250 mm.".

5.3.1.7.1 Amend read as follows:

"5.3.1.7.1 Except as provided in 5.3.1.7.2 for the Class 7 placard, and in 5.3.6.2 for the environmentally hazardous substance mark, a placard shall be configured as shown in Figure 5.3.1.7.1.

Figure 5.3.1.7.1



Placard (except for Class 7)

The placard shall be in the form of a square set at an angle of 45° (diamond-shaped). The minimum dimensions shall be 250 mm x 250 mm (to the edge of the placard). The line inside the edge shall be parallel and 12.5 mm from the outside of that line to the edge of the placard. The symbol and line inside the edge shall correspond in colour to the label for the class or division of the dangerous goods in question. The class or division symbol/numeral shall be positioned and sized in proportion to those prescribed in 5.2.2.2 for the corresponding class or division of the dangerous goods in question. The placard shall display the number of the class or division (and for goods in Class 1, the compatibility group letter) of the dangerous goods in question in the manner prescribed in 5.2.2.2 for the corresponding label, in digits not less than 25 mm high. Where dimensions are not specified, all features shall be in approximate proportion to those shown.".

5.3.2.1.1 At the end of the second paragraph, add the following new sentence:

"When tanks are marked in accordance with 5.3.2.1.3, this plate shall correspond to the most hazardous substance carried in the tank.".

5.3.2.2.1 Amend the second paragraph to read as follows:

"If the size and construction of the vehicle are such that the available surface area is insufficient to affix these orange-coloured plates, their dimensions may be reduced to a minimum of 300 mm for the base, 120 mm for the height and 10 mm for the black border. In this case, a different set of dimensions within the specified range may be used for the two orange-coloured plates specified in 5.3.2.1.1.

When reduced dimensions of orange-coloured plates are used for a packaged radioactive material carried under exclusive use, only the UN number is required and the size of the digits stipulated in 5.3.2.2.2 may be reduced to 65 mm in height and 10 mm in stroke thickness.".

5.3.3 Amend to read as follows:

"5.3.3 Elevated temperature substance mark

Tank-vehicles, tank-containers, portable tanks, special vehicles or containers or specially equipped vehicles or containers containing a substance that is carried or handed over for carriage in a liquid state at or above 100 °C or in a solid state at or above 240 °C shall bear on both sides and at the rear for vehicles, and on both sides and at each end for containers, tank-containers and portable tanks, the mark shown in Figure 5.3.3.

Figure 5.3.3

Mark for carriage at elevated temperature

The marking shall be an equilateral triangle. The colour of the mark shall be red. The minimum dimension of the sides shall be 250 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.".

5.3.6 Renumber the first paragraph 5.3.6.1. Delete "The provisions of section 5.3.1 concerning placards shall apply mutatis mutandis to the mark.".

Add a new paragraph 5.3.6.2 as follows:

"5.3.6.2 The environmentally hazardous substance mark for containers, MEGCs, tank-containers, portable tanks and vehicles shall be as described in 5.2.1.8.3 and Figure 5.2.1.8.3, except that the minimum dimensions shall be 250 mm x 250 mm. The other provisions of section 5.3.1 concerning placards shall apply mutatis mutandis to the mark.".

Chapter 5.4

5.4.1.1.1 (d) In the Note after (d) replace "172 (b)" by "172 (d)".

5.4.1.1.3 Amend the third paragraph to read as follows:

"If the provision for waste as set out in 2.1.3.5.5 is applied, the following shall be added to the dangerous goods description required in 5.4.1.1.1 (a) to (d) and (k):".

Example after this paragraph remains unchanged.

5.4.1.1.17 After "(x)", add a reference to a footnote 1 to read as follows:

"[1] (x) shall be replaced with "1" or "2" as appropriate.".

Renumber existing footnotes accordingly.

5.4.1.1.19 Add a new paragraph to read as follows:

"5.4.1.1.19 *Special provisions for carriage of packagings, discarded, empty, uncleaned (UN 3509)*

For packagings, discarded, empty, uncleaned, the proper shipping name specified in 5.4.1.1.1 (b) shall be complemented with the words "(WITH RESIDUES OF [...])" followed by the class(es) and subsidiary risk(s) corresponding to the residues, in the class numbering order. Moreover, 5.4.1.1.1 (f) does not apply.

Example: Packagings, discarded, empty, uncleaned having contained goods of Class 4.1 packed together with packagings, discarded, empty, uncleaned having contained goods of Class 3 with a Class 6.1 subsidiary risk should be referred to in the transport document as:

"UN 3509 PACKAGINGS, DISCARDED, EMPTY, UNCLEANED (WITH RESIDUES OF 3, 4.1, 6.1), 9".".

5.4.1.2.5.1 (b) Replace "see last sentence of special provision 172 of Chapter 3.3" by "see sub-paragraph (c) of special provision 172 of Chapter 3.3".

5.4.1.2.5.1 Amend (f) to read as follows:

"(f) For fissile material:

(i) Shipped under one exception of 2.2.7.2.3.5 (a) to (f), reference to that paragraph;

(ii) Shipped under 2.2.7.2.3.5 (e) to (e), the total mass of fissile nuclides;

(iii) Contained in a package for which one of 6.4.11 2 (a) to (c) or 6.4.11.3 is applied, reference to that paragraph;

(iv) The criticality safety index, where applicable;".

5.4.1.2.5.1 In (g), replace "competent authority approval certificate" by "competent authority certificate of approval" and insert "fissile material excepted under 2.2.7.2.3.5 (f)," before "special arrangement".

5.4.1.2.5.3 Replace "competent authorities design or shipment approval" by "competent authority approval of design or shipment".

5.4.2, footnote 5, paragraph .8 of 5.4.2.1 of the IMDG Code Amend to read as follows:

".8 When substances presenting a risk of asphyxiation are used for cooling or conditioning purposes (such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951)), the container/vehicle is externally marked in accordance with 5.5.3.6 (of the IMDG Code); and".

5.4.3.4 In the last page of "Instructions in writing according to ADR", make the following modifications:

Under "for each member of the vehicle crew", in the first indent, delete "(e.g. as described in the EN 471 standard)". In the fourth indent, delete "(e.g. protective goggles)".

Delete footnote "b" and rename current "c" as "b".

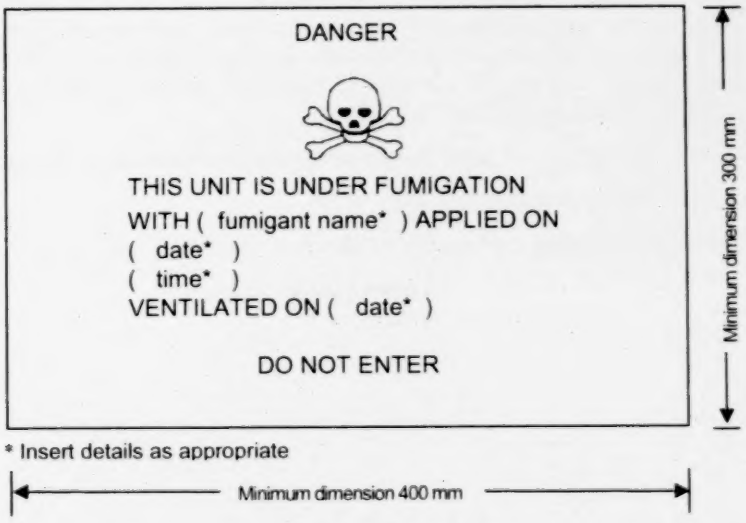
Under "Additional equipment required for certain classes:", amend all the references to footnote "c" to read "b".

Chapter 5.5

Amend 5.5.2.3.2 and the fumigation warning mark to read as follows:

"5.5.2.3.2 The fumigation warning mark shall be as shown in Figure 5.5.2.3.2.

Figure 5.5.2.3.2


DANGER
THIS UNIT IS UNDER FUMIGATION
WITH (fumigant name*) APPLIED ON
(date*)
(time*)
VENTILATED ON (date*)
DO NOT ENTER
Minimum dimension 300 mm
* Insert details as appropriate
Minimum dimension 400 mm

Fumigation warning mark

The marking shall be a rectangle. The minimum dimensions shall be 400 mm wide x 300 mm high and the minimum width of the outer line shall be 2 mm. The marking shall be in black print on a white background with lettering not less than 25 mm high. Where dimensions are not specified, all features shall be in approximate proportion to those shown.".

5.5.3.1 Add a new paragraph 5.5.3.1.4 to read as follows:

"5.5.3.1.4 Vehicles and containers containing substances used for cooling or conditioning purposes include vehicles and containers containing substances used for cooling or conditioning purposes inside packages as well as vehicles and containers with unpackaged substances used for cooling or conditioning purposes.".

5.5.3.1 Add a new paragraph 5.5.3.1.5 to read as follows:

"5.5.3.1.5 Sub-sections 5.5.3.6 and 5.5.3.7 only apply when there is an actual risk of asphyxiation in the vehicle or container. It is for the participants concerned to assess this risk, taking into consideration the hazards presented by the substances being used for cooling or conditioning, the amount of substance to be carried, the duration of the journey and the types of containment to be used. As a rule, it is assumed that packages containing dry ice (UN 1845) as a coolant do not present such a risk."

5.5.3.2.2 Amend to read as follows:

"5.5.3.2.2 When dangerous goods are loaded in vehicles or containers containing substances used for cooling or conditioning purposes any provisions of ADR relevant to these dangerous goods apply in addition to the provisions of this section.".

5.5.3.2.4 Amend to read as follows:

"5.5.3.2.4 Persons engaged in the handling or carriage of vehicles and containers containing substances used for cooling or conditioning purposes shall be trained commensurate with their responsibilities.".

5.5.3.3.3 Amend to read as follows:

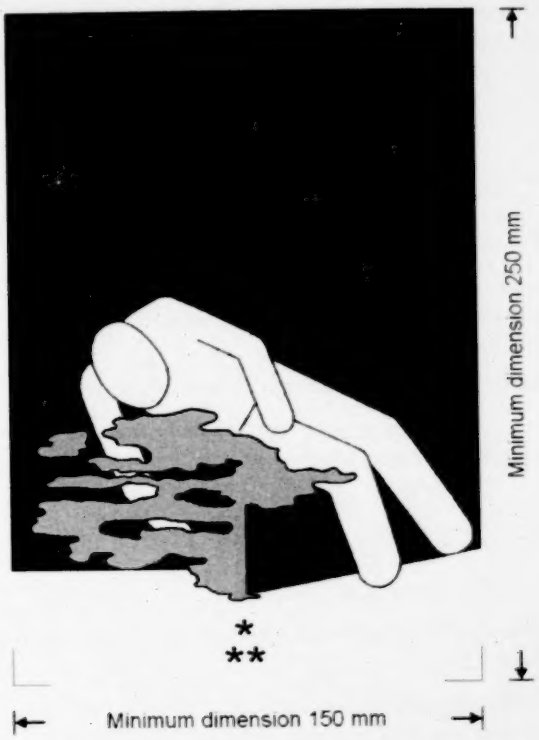
"5.5.3.3.3 Packages containing a coolant or conditioner shall be carried in well ventilated vehicles and containers. This provision does not apply when such packages are carried in insulated, refrigerated or mechanically refrigerated equipment, as defined in the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP).".

5.5.3.6.1 Add "purposes" after "cooling or conditioning" in the first sentence.

5.5.3.6.2 Amend to read as follows:

"5.5.3.6.2 The warning mark shall be as shown in Figure 5.5.3.6.2.

Figure 5.5.3.6.2



Coolant/conditioning warning mark for vehicles and containers

* Insert the name indicated in Column (2) of Table A of Chapter 3.2 of the coolant/conditioner. The lettering shall be in capitals, all be on one line and shall be at least 25 mm high. If the length of the proper shipping name is too long to fit in the space provided, the lettering may be reduced to the maximum size possible to fit. For example: "CARBON DIOXIDE, SOLID".

** Insert "AS COOLANT" or "AS CONDITIONER" as appropriate. The lettering shall be in capitals, all be on one line and be at least 25 mm high.

The marking shall be a rectangle. The minimum dimensions shall be 150 mm wide x 250 mm high. The word "WARNING" shall be in red or white and be at least 25 mm high. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

The word "WARNING" and the words "AS COOLANT" or "AS CONDITIONER", as appropriate, shall be in an official language of the country of origin and also, if that language is not English, French or German, in English, French or German, unless agreements concluded between the countries concerned in the transport operation provide otherwise.".

5.5.3.7.1 Replace "that have been cooled or conditioned" by "containing or having contained substances used for cooling or conditioning purposes".

Chapter 6.1

6.1.1.1 (e) After "Packagings" insert "for liquids, other than combination packagings,".

6.1.3.1 (e) Insert a reference to note * at the centre of the symbol and add the following note under the symbol:

"* The last two digits of the year of manufacture may be displayed at that place. In such a case, the two digits of the year in the type approval marking and in the inner circle of the clock shall be identical.".

6.1.3.1 (e) Insert a new Note at the end to read as follows:

"***NOTE**: Other methods that provide the minimum required information in a durable, visible and legible form are also acceptable.*".

Chapter 6.2

6.2.1.1.5 Add the following new last sentence:

"The test pressure of a cylinder for an adsorbed gas shall be in accordance with packing instruction P208 of 4.1.4.1.".

6.2.2 Add the following new second sentence: "Manufacture of new pressure receptacles or service equipment according to any particular standard in 6.2.2.1 and 6.2.2.3 is not permitted after the date shown in the right hand column of the tables.".

Add the following new note: ***"NOTE:** UN pressure receptacles and service equipment constructed according to standards applicable at the date of manufacture may continue in use subject to the periodic inspection provisions of ADR.".*

6.2.2.1.1 In the table, add a new third column. Add a new first row with the following text:

Reference	Title	Applicable for manufacture

For ISO Standards "ISO 9809-1:1999", "ISO 9809-2:2000"and "ISO 9809-3:2000", in the third column, add "Until 31 December 2018".

After ISO Standard "ISO 9809-1:1999" add the following new standard:

ISO 9809-1:2010	Gas cylinders -- Refillable seamless steel gas cylinders -- Design, construction and testing -- Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa	Until further notice

After ISO Standard "ISO 9809-2:2000" add the following new standard:

ISO 9809-2:2010	Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1 100 MPa	Until further notice

After ISO Standard "ISO 9809-3:2000" add the following new standard:

ISO 9809-3:2010	Gas cylinders -- Refillable seamless steel gas cylinders -- Design, construction and testing -- Part 3: Normalized steel cylinders	Until further notice

For all the other standards, in the column "Applicable for manufacture", add "Until further notice".

6.2.2.1.2 In the table, add a new third column. Add a new first row with the following text:

Reference	Title	Applicable for manufacture

For ISO Standard "ISO 11120:1999", in the column "Applicable for manufacture", add "Until further notice".

6.2.2.1.3 Amend the first table to read as follows:

Reference	Title	Applicable for manufacture
ISO 9809-1:1999	Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa ***NOTE:*** *The note concerning the F factor in section 7.3 of this standard shall not be applied for UN cylinders.*	Until 31 December 2018
ISO 9809-1:2010	Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa	Until further notice
ISO 9809-3:2000	Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 3: Normalized steel cylinders	Until 31 December 2018
ISO 9809-3:2010	Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 3: Normalized steel cylinders	Until further notice

6.2.2.1.3 (second table), 6.2.2.1.4 and 6.2.2.1.5 In the tables, add a new third column. Add a new first row with the following text:

Reference	Title	Applicable for manufacture

For all the standards, in the column "Applicable for manufacture", add "Until further notice".

After 6.2.2.1.5 insert the following new paragraphs:

"6.2.2.1.6 The standard shown below applies to the design, construction and initial inspection and test of UN bundles of cylinders. Each cylinder in a UN bundle of cylinders shall be a UN cylinder complying with the requirements of 6.2.2. The inspection requirements related to the conformity assessment system and approval for UN bundles of cylinders shall be in accordance with 6.2.2.5.

Reference	Title	Applicable for manufacture
ISO 10961:2010	Gas cylinders – Cylinder bundles – Design, manufacture, testing and inspection	Until further notice

NOTE*: Changing one or more cylinders of the same design type, including the same test pressure, in an existing UN bundle of cylinders does not require re-certification of the existing bundle.*

6.2.2.1.7 The following standards apply to the design, construction and initial inspection and test of UN cylinders for adsorbed gases except that the inspection

requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5.

Reference	Title	Applicable for manufacture
ISO 11513:2011	Gas cylinders – Refillable welded steel cylinders containing materials for sub-atmospheric gas packaging (excluding acetylene) – Design, construction, testing, use and periodic inspection	Until further notice
ISO 9809-1:2010	Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa	Until further notice

".

6.2.2.2 Replace "ISO 11114-1:1997" with "ISO 11114-1:2012". In the title for standard "ISO 11114-1:2012", delete "Transportable". Delete the note at the end.

6.2.2.3 Amend the first table to read as follows:

Reference	Title	Applicable for manufacture
ISO 11117:1998	Gas cylinders – Valve protection caps and valve guards for industrial and medical gas cylinders – Design, construction and tests	Until 31 December 2014
ISO 11117:2008 + Cor 1:2009	Gas cylinders – Valve protection caps and valve guards – Design, construction and tests	Until further notice
ISO 10297:1999	Gas cylinders – Refillable gas cylinder valves – Specification and type testing	Until 31 December 2008
ISO 10297:2006	Gas cylinders – Refillable gas cylinder valves – Specification and type testing ***NOTE:*** *The EN version of this ISO standard fulfils the requirements and may also be used.*	Until further notice
ISO 13340:2001	Transportable gas cylinders – Cylinder valves for non-refillable cylinders – Specification and prototype testing	Until further notice

6.2.2.3 In the second table, add a new third column. Add a new first row with the following text:

Reference	Title	Applicable for manufacture

For ISO Standard "ISO 16111:2008", in the column "Applicable for manufacture", add "Until further notice".

6.2.2.4 In the table, add a new third column. Add a new first row with the following text:

Reference	Title	Applicable

For all standards, in the column "Applicable", add "Until further notice".

6.2.2.4 In the table of standards for periodic inspection and test, after the entry for "ISO 10462:2005" add the following new entry:

ISO 11513:2011	Gas cylinders – Refillable welded steel cylinders containing materials for sub-atmospheric gas packaging (excluding acetylene) – Design, construction, testing, use and periodic inspection	Until further notice

6.2.2.7 Amend the note to read as follows:

"***NOTE:*** *Marking requirements for UN metal hydride storage systems are given in 6.2.2.9 and marking requirements for UN bundles of cylinders are given in 6.2.2.10.*".

6.2.2.7.4 (p) Replace "ISO 11114-1:1997" by "ISO 11114-1:2012".

6.2.2.7.9 Delete paragraph 6.2.2.7.9 and insert "6.2.2.7.9 (Deleted)".

6.2.2.9.2 (j) Replace "ISO 11114-1:1997" by "ISO 11114-1:2012".

6.2.2.10 Add the following new section and renumber existing 6.2.2.10 as 6.2.2.11 (and renumber cross-reference accordingly in 1.8.6.8, 1.8.7, 1.8.7.1.1 and 1.8.7.1.4):

"**6.2.2.10** ***Marking of UN bundles of cylinders***

6.2.2.10.1 Individual cylinders in a bundle of cylinders shall be marked in accordance with 6.2.2.7.

6.2.2.10.2 Refillable UN bundles of cylinders shall be marked clearly and legibly with certification, operational, and manufacturing marks. These marks shall be permanently affixed (e.g. stamped, engraved, or etched) on a plate permanently attached to the frame of the bundle of cylinders. Except for the UN packaging symbol, the minimum size of the marks shall be 5 mm. The minimum size of the UN packaging symbol shall be 10 mm.

6.2.2.10.3 The following marks shall be applied:

(a) The certification marks specified in 6.2.2.7.2 (a), (b), (c), (d) and (e);

(b) The operational marks specified in 6.2.2.7.3 (f), (i), (j) and the total of the mass of the frame of the bundle and all permanently attached parts (cylinders, manifold, fittings and valves). Bundles intended for the carriage of UN 1001 acetylene, dissolved and UN 3374 acetylene, solvent free shall bear the tare mass as specified in clause B.4.2 of ISO 10961:2010; and

(c) The manufacturing marks specified in 6.2.2.7.4 (n), (o) and, where applicable, (p).

6.2.2.10.4 The marks shall be placed in three groups:

(a) The manufacturing marks shall be the top grouping and shall appear consecutively in the sequence given in 6.2.2.10.3 (c);

(b) The operational marks in 6.2.2.10.3 (b) shall be the middle grouping and the operational mark specified in 6.2.2.7.3 (f) shall be immediately preceded by the operational mark specified in 6.2.2.7.3 (i) when the latter is required;

(c) Certification marks shall be the bottom grouping and shall appear in the sequence given in 6.2.2.10.3 (a).".

6.2.2.11 (former 6.2.2.10) In the three sub-paragraphs after the Table Replace "EN ISO/IEC 17020:2004" by "EN ISO/IEC 17020:2012 (except clause 8.1.3)".

6.2.3.5.1 Replace "6.2.1.6.1" by "6.2.1.6".

6.2.3.5.2 Replace "Deleted" by the following new text:

"6.2.3.5.2 Closed cryogenic receptacles shall be subject to periodic inspections and tests in accordance with the periodicity defined in packing instruction P203 (8) (b) of 4.1.4.1, in accordance with the following:

(a) Check of the external condition of the receptacle and verification of the equipment and the external markings;

(b) The leakproofness test.".

6.2.3.6.1, in the second, third and fourth sub-paragraphs after the Table Replace "EN ISO/IEC 17020:2004" by "EN ISO/IEC 17020:2012 (except clause 8.1.3)".

6.2.3.9.7 Amend to read as follows:

"6.2.3.9.7 *Marking of bundles of cylinders*

Markings shall be in accordance with sub-section 6.2.2.10, except that the United Nations packaging symbol specified in 6.2.2.7.2 (a) shall not be applied.".

6.2.4.1 and 6.2.4.2 Before the Table, insert the following sentence: "The scope of application of each standard is defined in the scope clause of the standard unless otherwise specified in the Table below.".

6.2.4.1 Under "*for design and construction*", for standard "EN 13110:2012", in column (1), delete: "except clause 9".

6.2.4.1 In the table under "for design and construction":

In the entry for "EN 1800:2006", replace "Until further notice" by "Between 1 January 2009 and 31 December 2016", in column (4).

After "EN 1800:2006", add the following new entry:

(1)	(2)	(3)	(4)	(5)
EN ISO 3807:2013	Gas cylinders – Acetylene cylinders – Basic requirements and type testing	6.2.1.1.9	Until further notice	

After "EN ISO 11120:1999", add the following new entry:

(1)	(2)	(3)	(4)	(5)
EN ISO 11120:1999 + A1:2013	Gas cylinders – Refillable seamless steel tubes for compressed gas transport of water capacity between 150 litres and 3 000 litres – Design, construction and testing	6.2.3.1 and 6.2.3.4	Until further notice	

In the entry for "EN 14427:2004", replace "Until 30 June 2007" by "Between 1 January 2005 and 30 June 2007", in column (4).

In the entry for "EN 14427:2004 + A1:2005", replace "Until further notice" by "Between 1 January 2007 and 31 December 2016", in column (4).

After "EN 14427:2004 + A1:2005", add the following new entry:

(1)	(2)	(3)	(4)	(5)
EN 14427:2014	LPG Equipment and accessories – Transportable refillable fully wrapped composite cylinders for LPG – Design and construction	6.2.3.1 and 6.2.3.4	Until further notice	

In the entry for "EN 14893:2006 +AC:2007", replace "Until further notice" by "Between 1 January 2009 and 31 December 2016", in column (4).

After "EN 14893:2006 +AC:2007", add the following new entry:

(1)	(2)	(3)	(4)	(5)
EN 14893:2014	LPG equipment and accessories – Transportable LPG welded steel pressure drums with a capacity between 150 and 1 000 litres	6.2.3.1 and 6.2.3.4	Until further notice	

6.2.4.2 At the end of the table, insert the following new standard:

(1)	(2)	(3)
EN 15888: 2014	Transportable gas cylinders - Cylinder bundles - Periodic inspection and testing	Until further notice

6.2.6.1.5 Amend to read as follows:

"6.2.6.1.5 The interral pressure of aerosol dispensers at 50 °C shall exceed neither two-thirds of the test pressure nor 1.32 MPa (13.2 bar). They shall be so filled that at 50 °C the liquid phase does not exceed 95% of their capacity. Small receptacles containing gas (gas cartridges) shall meet the test pressure and filling requirements of P200 of 4.1.4.1.".

6.2.6.3 Amend to read as follows:

"6.2.6.3 *Tightness (leakproofness) test*

Each filled aerosol dispenser or gas cartridge or fuel cell cartridge shall be subjected to a test in a hot water bath in accordance with 6.2.6.3.1 or an approved water bath alternative in accordance with 6.2.6.3.2.

6.2.6.3.1 *Hot water bath test*

6.2.6.3.1.1 The temperature of the water bath and the duration of the test shall be such that the internal pressure reaches that which would be reached at 55 °C (50 °C if the liquid phase does not exceed 95% of the capacity of the aerosol dispenser, gas cartridge or the fuel cell cartridge at 50 °C). If the contents are sensitive to heat or if the aerosol dispensers, gas cartridges or the fuel cell cartridges are made of plastics material which softens at this test temperature, the temperature of the bath shall be set at between 20 °C and 30 °C but, in addition, one aerosol dispenser, gas cartridge or the fuel cell cartridge in 2 000 shall be tested at the higher temperature.

6.2.6.3.1.2 No leakage or permanent deformation of an aerosol dispenser, gas cartridge or the fuel cell cartridge may occur, except that a plastic aerosol dispenser, gas cartridge or the fuel cell cartridge may be deformed through softening provided that it does not leak.

6.2.6.3.2 *Alternative methods*

With the approval of the competent authority alternative methods that provide an equivalent level of safety may be used provided that the requirements of 6.2.6.3.2.1 and, as appropriate, 6.2.6.3.2.2 or 6.2.6.3.2.3 are met.

6.2.6.3.2.1 Quality system

Aerosol dispenser, gas cartridge or the fuel cell cartridge fillers and component manufacturers shall have a quality system. The quality system shall implement procedures to ensure that all aerosol dispensers, gas cartridges or the fuel cell cartridges that leak or that are deformed are rejected and not offered for transport.

The quality system shall include:

(a) A description of the organizational structure and responsibilities;

(b) The relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;

(c) Quality records, such as inspection reports, test data, calibration data and certificates;

(d) Management reviews to ensure the effective operation of the quality system;

(e) A process for control of documents and their revision;

(f) A means for control of non-conforming aerosol dispensers, gas cartridges or the fuel cell cartridges;

(g) Training programmes and qualification procedures for relevant personnel; and

(h) Procedures to ensure that there is no damage to the final product.

An initial audit and periodic audits shall be conducted to the satisfaction of the competent authority. These audits shall ensure the approved system is and remains adequate and efficient. Any proposed changes to the approved system shall be notified to the competent authority in advance.

6.2.6.3.2.2 Aerosol dispensers

6.2.6.3.2.2.1 Pressure and leak testing of aerosol dispensers before filling

Each empty aerosol dispenser shall be subjected to a pressure equal to or in excess of the maximum expected in the filled aerosol dispensers at 55 °C (50 °C if the liquid phase does not exceed 95% of the capacity of the receptacle at 50 °C). This shall be at least two-thirds of the design pressure of the aerosol dispenser. If any aerosol dispenser shows evidence of leakage at a rate equal to or greater than 3.3×10^{-2} mbar.l.s^{-1} at the test pressure, distortion or other defect, it shall be rejected.

6.2.6.3.2.2.2 Testing of the aerosol dispensers after filling

Prior to filling the filler shall ensure that the crimping equipment is set appropriately and the specified propellant is used.

Each filled aerosol dispenser shall be weighed and leak tested. The leak detection equipment shall be sufficiently sensitive to detect at least a leak rate of 2.0×10^{-3} mbar.l.s^{-1} at 20 °C.

Any filled aerosol dispenser that shows evidence of leakage, deformation or excessive mass shall be rejected.

6.2.6.3.2.3 Gas cartridges and fuel cell cartridges

6.2.6.3.2.3.1 Pressure testing of gas cartridges and fuel cell cartridges

Each gas cartridge or fuel cell cartridge shall be subjected to a test pressure equal to or in excess of the maximum expected in the filled receptacle at 55 °C (50 °C if the liquid phase does not exceed 95% of the capacity of the receptacle at 50 °C). This test pressure shall be that specified for the gas cartridge or fuel cell cartridge and shall not be less than

two thirds the design pressure of the gas cartridge or fuel cell cartridge. If any gas cartridge or fuel cell cartridge shows evidence of leakage at a rate equal to or greater than 3.3×10^{-2} mbar.l.s^{-1} at the test pressure or distortion or any other defect, it shall be rejected.

6.2.6.3.2.3.2 Leak testing gas cartridges and fuel cell cartridges

Prior to filling and sealing, the filler shall ensure that the closures (if any), and the associated sealing equipment are closed appropriately and the specified gas is used.

Each filled gas cartridge or fuel cell cartridge shall be checked for the correct mass of gas and shall be leak tested. The leak detection equipment shall be sufficiently sensitive to detect at least a leak rate of 2.0×10^{-3} mbar.l.s^{-1} at 20 °C.

Any gas cartridge or fuel cell cartridge that has gas masses not in conformity with the declared mass limits or shows evidence of leakage or deformation, shall be rejected.".

6.2.6.3.3 Remains unchanged.

Chapter 6.4

In the title, replace the remainder of the sentence after "APPROVAL OF PACKAGES" by "FOR RADIOACTIVE MATERIAL AND FOR THE APPROVAL OF SUCH MATERIAL".

The second amendment to Chapter 6.4 only applies to the French text.

6.4.2.11 Insert a new paragraph 6.4.2.11 to read as follows:

"6.4.2.11 A package shall be so designed that it provides sufficient shielding to ensure that, under routine conditions of carriage and with the maximum radioactive contents that the package is designed to contain, the radiation level at any point on the external surface of the package would not exceed the values specified in 2.2.7.2.4.1.2, 4.1.9.1.10 and 4.1.9.1.11, as applicable, with account taken of 7.5.11 CV33 (3.3) (b) and (3.5).".

Current paragraphs 6.4.2.11 and 6.4.2.12 become 6.4.2.12 and 6.4.2.13 respectively.

6.4.5.4.3 Replace "Table 4.1.9.2.4" by "Table 4.1.9.2.5".

6.4.6.1 Amend the first sentence to read as follows:

"Packages designed to contain uranium hexafluoride shall meet the requirements which pertain to the radioactive and fissile properties of the material prescribed elsewhere in ADR.".

6.4.6.2 In (a) and (c), insert at the end: "except as allowed in 6.4.6.4".

6.4.6.4 In the introductory sentence replace "the approval of the competent authority" by "multilateral approval" and insert "the packages are designed:" at the end, after "if".

6.4.6.4 In (a) and (b) delete "The packages are designed" and replace "and" by "and/or" at the end.

6.4.6.4 In (c), delete "For packages designed" and replace "hexafluoride, the packages" by "hexafluoride and the packages".

6.4.8.2 Amend the end of the introductory paragraph to read: "...which may cause one or more of the following:".

In (a) and (b), delete "or" at the end.

6.4.8.8 In (b), replace "and the tests in" by "and either the test in".

6.4.9.1 In the first sentence, replace "6.4.8.4, 6.4.8.5, 6.4.8.6," by "6.4.8.4 to 6.4.8.6".

In the second sentence, insert "6.4.8.4 and" after "packages specified in".

6.4.10.3 Amend to read as follows:

"6.4.10.3 A package shall be so designed that, if it were at the maximum normal operating pressure and subjected to:

(a) The tests specified in 6.4.15, it would restrict the loss of radioactive contents to not more than 10^{-6} A_2 per hour; and

(b) The test sequences in 6.4.20.1,

(i) it would retain sufficient shielding to ensure that the radiation level at 1 m from the surface of the package would not exceed 10 mSv/h with the maximum radioactive contents which the package is designed to contain; and

(ii) it would restrict the accumulated loss of radioactive contents in a period of 1 week to not more than 10 A_2 for krypton-85 and not more than A_2 for all other radionuclides."

Text of last paragraph remains unchanged.

6.4.11.1 In (a), insert "routine," before "normal".

6.4.11.1 Amend (b) (i) to read as follows: "(i) of 6.4.7.2 except for unpackaged material when specifically allowed by 2.2.7.2.3.5 (e);".

6.4.11.1 In (b) (ii) delete "and" at the end.

6.4.11.1 Amend (b) (iii) to read as follows: "(iii) of 6.4.7.3 unless the material is excepted by 2.2.7.2.3.5;".

6.4.11.1 Insert a new (b) (iv) to read as follows:

"(iv) of 6.4.11.4 to 6.4.11.14, unless the material is excepted by 2.2.7.2.3.5, 6.4.11.2 or 6.4.11.3.".

6.4.11.2 Amend to read as follows:

"6.4.11.2 Packages containing fissile material that meet the provisions of subparagraph (d) and one of the provisions of (a) to (c) below are excepted from the requirements of 6.4.11.4 to 6.4.11.14.

(a) Packages containing fissile material in any form provided that:

(i) The smallest external dimension of the package is not less than 10 cm;

(ii) The criticality safety index of the package is calculated using the following formula:

$$CSI = 50 \times 5 \times \left(\frac{\textit{Mass of U-235 in package (g)}}{Z} + \frac{\textit{Mass of other fissile nuclides}^{*} \textit{ in package (g)}}{280} \right)$$

* Plutonium may be of any isotopic composition provided that the amount of Pu-241 is less than that of Pu-240 in the package

where the values of Z are taken from Table 6.4.11.2;

(iii) The CSI of any package does not exceed 10;

(b) Packages containing fissile material in any form provided that:

(i) The smallest external dimension of the package is not less than 30 cm;

(ii) The package, after being subjected to the tests specified in 6.4.15.1 to 6.4.15.6:

- Retains its fissile material contents;
- Preserves the minimum overall outside dimensions of the package to at least 30 cm;
- Prevents the entry of a 10 cm cube;

(iii) The criticality safety index of the package is calculated using the following formula:

$$CSI = 50 \times 2 \times \left(\frac{\textit{Mass of U-235 in package (g)}}{Z} + \frac{\textit{Mass of other fissile nuclides}^{*} \textit{ in package (g)}}{280} \right)$$

* Plutonium may be of any isotopic composition provided that the amount of Pu-241 is less than that of Pu-240 in the package

where the values of Z are taken from Table 6.4.11.2;

(iv) The criticality safety index of any package does not exceed 10;

(c) Packages containing fissile material in any form provided that:

(i) The smallest external dimension of the package is not less than 10 cm;

(ii) The package, after being subjected to the tests specified in 6.4.15.1 to 6.4.15.6:

- Retains its fissile material contents;
- Preserves the minimum overall outside dimensions of the package to at least 10 cm;
- Prevents the entry of a 10 cm cube;

(iii) The CSI of the package is calculated using the following formula:

$$CSI = 50 \times 2 \times \left(\frac{\textit{Mass of U-235 in package (g)}}{450} + \frac{\textit{Mass of other fissile nuclides}^{*} \textit{ in package (g)}}{280} \right)$$

* Plutonium may be of any isotopic composition provided that the amount of Pu-241 is less than that of Pu-240 in the package

(iv) The maximum mass of fissile nuclides in any package does not exceed 15 g;

(d) The total mass of beryllium, hydrogenous material enriched in deuterium, graphite and other allotropic forms of carbon in an individual package shall not be greater than the mass of fissile nuclides in the package except where their total concentration does not exceed 1 g in any 1 000 g of material. Beryllium incorporated in copper alloys up to 4% in weight of the alloy does not need to be considered.

Table 6.4.11.2 with 6.4.11.2 Values of Z for calculation of criticality safety index in accordance

Enrichement[a]	*Z*
Uranium enriched up to 1.5%	2200
Uranium enriched up to 5%	850
Uranium enriched up to 10%	660
Uranium enriched up to 20%	580
Uranium enriched up to 100%	450

[a] *If a package contains uranium with varying enrichments of U-235, then the value corresponding to the highest enrichment shall be used for Z.".*

6.4.11.3 Insert a new paragraph to read as follows:

"6.4.11.3 Packages containing not more than 1 000 g of plutonium are excepted from the application of 6.4.11.4 to 6.4.11.14 provided that:

(a) Not more than 20% of the plutonium by mass is fissile nuclides;

(b) The criticality safety index of the package is calculated using the following formula:

$$CSI = 50 \times 2 \times \frac{\text{mass of plutonium (g)}}{1000}$$

(c) If uranium is present with the plutonium, the mass of uranium shall be no more than 1% of the mass of the plutonium.".

Current paragraphs 6.4.11.3 to 6.4.11.13 become new paragraphs 6.4.11.4 to 6.4.11.14.

6.4.11.4 (former 6.4.11.3) Replace "6.4.11.7 to 6.4.11.12" by "6.4.11.8 to 6.4.11.13".

6.4.11.5 (former 6.4.11.4) Replace "6.4.11.7 to 6.4.11.12" by "6.4.11.8 to 6.4.11.13" and insert "either" at the end of the introductory sentence.

6.4.11.8 (former 6.4.11.7) In the last sentence of the introductory paragraph, insert "either of" before "the following:".

In (a) and (b) (i), replace "6.4.11.12 (b)" by "6.4.11.13 (b)".

6.4.11.9 (former 6.4.11.8) In the first sentence, replace "shall be closely" by "is closely"; in the last sentence replace "6.4.11.12 (b)" by "6.4.11.13 (b)" and "6.4.11.9 (c)" by "6.4.11.10 (c)".

6.4.11.10 (former 6.4.11.9) In the introductory sentence replace "6.4.11.7 and 6.4.11.8" by "6.4.11.8 and 6.4.11.9".

6.4.11.10 (former 6.4.11.9) In (b), replace "6.4.11.11 (b)" by "6.4.11.12 (b)". In (c), replace "6.4.11.12 (b)" by "6.4.11.13 (b)".

6.4.11.13 (former 6.4.11.12) In (c), replace "6.4.11.12 (b)" by "6.4.11.13 (b)".

6.4.11.14 (former 6.4.11.13) Replace "6.4.11.11 and 6.4.11.12" by "6.4.11.12 and 6.4.11.13".

6.4.13 In (c) replace "6.4.11.13" by "6.4.11.14".

6.4.15.5 In (a), amend the beginning to read: "The equivalent of 5 times...".

6.4.17.2 In the introductory paragraph, replace "6.4.11.12" by "6.4.11.13".

6.4.17.2 In (b), move the phrase "so as to suffer maximum damage" to the end of the sentence after "on the target".

6.4.17.2 In (c), insert the following new third sentence: "The lower face of the steel plate shall have its edges and corners rounded off to a radius of not more than 6 mm.".

6.4.19.1 Replace "6.4.11.7 to 6.4.11.12" by "6.4.11.8 to 6.4.11.13".

6.4.19.2 Replace "6.4.11.12" by "6.4.11.13".

6.4.20.2 In the first sentence, insert "vertical" before "solid". In the second sentence replace "the probe to the surface of the specimen shall be as to cause" by "the package specimen and the impact point on the package surface shall be such as to cause".

6.4.22.4 Amend to read as follows:

"6.4.22.4 Each package design for fissile material which is not excepted by any of the paragraphs 2.2.7.2.3.5 (a) to (f), 6.4.11.2 and 6.4.11.3 shall require multilateral approval.".

Insert a new paragraph to read as follows:

"6.4.22.6 The design for a fissile material excepted from "FISSILE" classification in accordance with 2.2.7.2.3.5 (f) shall require multilateral approval.

6.4.22.7 Insert a new paragraph to read as follows:

"6.4.22.7 Alternative activity limits for an exempt consignment of instruments or articles in accordance with 2.2.7.2.2.2 (b) shall require multilateral approval."

Renumber existing 6.4.22.6 as 6.4.22.8 and existing 6.4.22.7 as 6.4.22.9.

6.4.23.2 In the introductory sentence replace "shipment approval" by "approval of shipment".

In (c), amend the end of the paragraph to read as follows: "... referred to in the certificate of approval for the package design, if applicable, issued under 5.1.5.2.1 (a) (v), (vi) or (vii), are to be put into effect.".

6.4.23.4 In (f), insert "nuclear" after "irradiated" and replace "6.4.11.4 (b)" by "6.4.11.5 (b)". In (i), replace "quality assurance programme" by "management system".

6.4.23.5 In the introductory sentence, delete "for package approval".

6.4.23.5 In (a), replace "6.4.8.4, 6.4.8.5, 6.4.8.6" by "6.4.8.4 to 6.4.8.6".

6.4.23.5 In (d), amend the beginning of the sentence to read: "A statement of the range".

6.4.23.6 Replace "quality assurance programme" by "management system".

6.4.23.7 Replace "quality assurance programme" by "management system".

6.4.23.8 In (d) replace "quality assurance programme" by "management system".

6.4.23.9 Insert a new paragraph to read as follows:

"6.4.23.9 An application for approval of design for fissile material excepted from "FISSILE" classification in accordance with Table 2.2.7.2.1.1, under 2.2.7.2.3.5 (f) shall include:

(a) A detailed description of the material; particular reference shall be made to both physical and chemical states;

(b) A statement of the tests that have been carried out and their results, or evidence based on calculation methods to show that the material is capable of meeting the requirements specified in 2.2.7.2.3.6;

(c) A specification of the applicable management system as required in 1.7.3;

(d) A statement of specific actions to be taken prior to shipment.".

6.4.23.10 Insert a new paragraph to read as follows:

"6.4.23.10 An application for approval of alternative activity limits for an exempt consignment of instruments or articles shall include:

(a) An identification and detailed description of the instrument or article, its intended uses and the radionuclide(s) incorporated;

(b) The maximum activity of the radionuclide(s) in the instrument or article;

(c) Maximum external radiation levels arising from the instrument or article;

(d) The chemical and physical forms of the radionuclide(s) contained in the instrument or article;

(e) Details of the construction and design of the instrument or article, particularly as related to the containment and shielding of the radionuclide in routine, normal and accident conditions of carriage;

(f) The applicable management system, including the quality testing and verification procedures to be applied to radioactive sources, components and finished products to ensure that the maximum specified activity of radioactive material or the maximum radiation levels specified for the instrument or article are not exceeded, and that the instruments or articles are constructed according to the design specifications;

(g) The maximum number of instruments or articles expected to be shipped per consignment and annually;

(h) Dose assessments in accordance with the principles and methodologies set out in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996), including individual doses to transport workers and members of the public and, if appropriate, collective doses arising from routine, normal and accident conditions of carriage, based on representative carriage scenarios the consignments are subject to.".

Current paragraphs 6.4.23.9 to 6.4.23.11 become new paragraphs 6.4.23.11 to 6.4.23.13.

6.4.23.11 (former 6.4.23.9) In the introductory sentence, replace "approval certificate" by "certificate of approval".

6.4.23.11 (former 6.4.23.9) (a) Replace "6.4.23.10 (b)" by "6.4.23.12 (b)".

6.4.23.11 (former 6.4.23.9) (b) Insert "or alternative activity limit for exempt consignment" at the end of the first sentence. Amend the second sentence to read: "The identification mark of the approval of shipment shall be clearly related to the identification mark of the approval of design.".

6.4.23.11 (former 6.4.23.9) (c) In the introductory sentence, replace "types of approval certificates" by "types of certificate of approval". Insert the following line between those corresponding to LD and T: "FE Fissile material complying with the requirements of 2.2.7.2.3.6". Add the following line at the end of the list: "AL Alternative activity limits for an exempt consignment of instruments or articles".

6.4.23.11 (former 6.4.23.9) (d) Insert "certificates of approval of" before "package design", delete (twice) "approval certificates" after "radioactive material" and replace "1.6.6.2 and 1.6.6.3" by "1.6.6.2 to 1.6.6.4".

6.4.23.12 (former 6.4.23.10) In the introductory sentence replace "type codes" by "identification marks".

6.4.23.12 (former 6.4.23.10) (a) Replace "6.4.23.9 (a), (b), (c) and (d)" by "6.4.23.11 (a), (b), (c) and (d)"; "design approval" by "approval of design", and "shipment approval" by "the approval of shipment".

6.4.23.12 (former 6.4.23.10) (a) For A/132/B(M)F-96, replace "package design approval certificate" by "certificate of approval for the package design".

6.4.23.12 (former 6.4.23.10) (a) For A/132/B(M)F-96T, replace "shipment approval" by "approval of shipment".

6.4.23.12 (former 6.4.23.10) (a) For A/137/X, replace "A special arrangement approval" by "An approval of special arrangement";

6.4.23.12 (former 6.4.23.10) (a) For A/139/IF-96 and A/145/H(U)-96, replace "package design approval certificate" by "certificate of approval for the package design".

6.4.23.12 (former 6.4.23.10) (b) Replace "according to 6.4.23.16" by "in accordance with 6.4.23.20".

6.4.23.12 (former 6.4.23.10) (c) Replace (twice) "package design approval certificate" by "certificate of approval for the package design"; and "approval certificate" by "certificate of approval" in the last sentence.

6.4.23.13 (former 6.4.23.11) In the introductory sentence replace "approval certificate" by "certificate of approval" and in (i) replace "quality assurance programme" by "management system".

6.4.23.14 Insert a new paragraph to read as follows:

"6.4.23.14 Each certificate of approval issued by a competent authority for material excepted from classification as "FISSILE" shall include the following information:

(a) Type of certificate;

(b) The competent authority identification mark;

(c) The issue date and an expiry date;

(d) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the exception is approved;

(e) A description of the excepted material;

(f) Limiting specifications for the excepted material;

(g) A specification of the applicable management system as required in 1.7.3;

(h) Reference to information provided by the applicant relating to specific actions to be taken prior to shipment;

(i) If deemed appropriate by the competent authority, reference to the identity of the applicant;

(j) Signature and identification of the certifying official;

(k) Reference to documentation that demonstrates compliance with 2.2.7.2.3.6.".

Current paragraphs 6.4.23.12 to 6.4.23.14 become new paragraphs 6.4.23.15 to 6.4.23.17.

6.4.23.15 (former 6.4.23.12) In the introductory sentence replace "approval certificate" by "certificate of approval".

6.4.23.15 (former 6.4.23.12) (j) Replace "amounts" by "mass" and amend the end of the paragraph to read as follows: "...special form radioactive material, low dispersible radioactive material or fissile material excepted under 2.2.7.2.3.5 (f) if applicable;".

6.4.23.15 (former 6.4.23.12) (k)(v) Replace "6.4.11.4 (b)" by "6.4.11.5 (b)".

6.4.23.15 (former 6.4.23.12) (r) Replace "quality assurance programme" by "management system".

6.4.23.16 (former 6.4.23.13) In the introductory sentence, replace "approval certificate" by "certificate of approval".

6.4.23.16 (former 6.4.23.13) (i) Replace "design approval certificate(s)" by "certificate(s) of approval of design".

6.4.23.16 (former 6.4.23.13) (j) Replace "amounts" by "mass" and amend the end of the paragraph to read as follows: "...special form radioactive material, low dispersible radioactive material or fissile material excepted under 2.2.7.2.3.5 (f) if applicable;".

6.4.23.16 (former 6.4.23.13) (l) Replace "quality assurance programme" by "management system".

6.4.23.17 (former 6.4.23.14) In the introductory sentence, replace "approval certificate" by "certificate of approval".

6.4.23.17 (former 6.4.23.14) (h) Replace "shipment approval" by "approval of shipment".

6.4.23.17 (former 6.4.23.14) (l) Amend the end of the second sentence to read as follows: "...mass in grams (for fissile material the total mass of fissile nuclides or the mass for each fissile nuclide, when appropriate) and whether special form radioactive material, low dispersible radioactive material or fissile material excepted under 2.2.7.2.3.5 (f), if applicable;".

6.4.23.17 (former 6.4.23.14) (n) Amend the introductory sentence to read as follows: "For package designs containing fissile material which require multilateral approval of the package design in accordance with 6.4.22.4:".

6.4.23.17 (former 6.4.23.14) (n) (vi) Replace "6.4.11.4 (b)" by "6.4.11.5 (b)".

6.4.23.17 (former 6.4.23.14) (t) Replace "quality assurance programme" by "management system".

6.4.23.18 Insert a new paragraph 6.4.23.18 to read as follows:

"6.4.23.18 Each certificate issued by a competent authority for alternative activity limits for an exempt consignment of instruments or articles according to 5.1.5.2.1 (d) shall include the following information:

(a) Type of certificate;

(b) The competent authority identification mark;

(c) The issue date and an expiry date;

(d) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the exemption is approved;

(e) The identification of the instrument or article;

(f) A description of the instrument or article;

(g) Design specifications for the instrument or article;

(h) A specification of the radionuclide(s), the approved alternative activity limit(s) for the exempt consignment(s) of the instrument(s) or article(s);

(i) Reference to documentation that demonstrates compliance with 2.2.7.2.2.2 (b);

(j) If deemed appropriate by the competent authority, reference to the identity of the applicant;

(k) Signature and identification of the certifying official.".

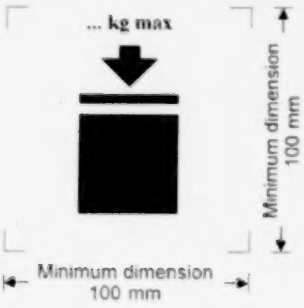
Current paragraphs 6.4.23.15 and 6.4.23.16 become 6.4.23.19 and 6.4.23.20 respectively.

Chapter 6.5

Amend 6.5.2.2.2 to read as follows:

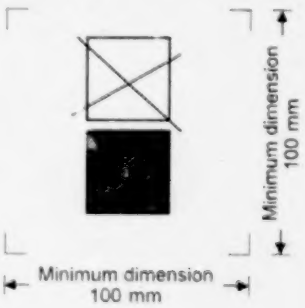
"6.5.2.2.2 The maximum permitted stacking load applicable when the IBC is in use shall be displayed on a symbol as shown in Figure 6.5.2.2.1 or Figure 6.5.2.2.2. The symbol shall be durable and clearly visible.

Figure 6.5.2.2.2.1



IBCs capable of being stacked

Figure 6.5.2.2.2.2



IBCs NOT capable of being stacked

The minimum dimensions shall be 100 mm x 100 mm. The letters and numbers indicating the mass shall be at least 12 mm high. The area within the printer's marks indicated by the dimensional arrows shall be square. Where dimensions are not specified, all features shall be in approximate proportion to those shown. The mass marked above the symbol shall not exceed the load imposed during the design type test (see 6.5.6.6.4) divided by 1.8.".

6.5.2.2.4 After "The date of the manufacture of the plastics inner receptacle may alternatively be marked on the inner receptacle adjacent to the remainder of the marking." add the following new sentence: "In such a case, the two digits of the year in the marking and in the inner circle of the clock shall be identical.". At the end, add a new Note to read as follows:

"***NOTE**: Other methods that provide the minimum required information in a durable, visible and legible form are also acceptable.*".

Chapter 6.6

6.6.2.2 At the beginning, replace "The letter "W"" by "The letters "T" or "W"" and insert a new second sentence to read as follows: "The letter "T" signifies a large salvage packaging conforming to the requirements of 6.6.5.1.9.".

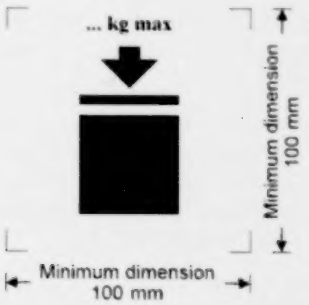
6.6.3.2 Insert a new second example to read as follows:

"	(UN) 50AT/Y/05/01/B/PQR S 2500/1000	For a large steel salvage packaging suitable for stacking; stacking load: 2 500 kg; maximum gross mass: 1 000 kg".

Amend 6.6.3.3 to read as follows:

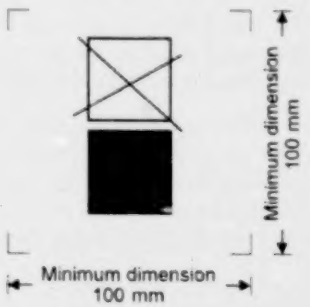
"6.6.3.3 The maximum permitted stacking load applicable when the large packaging is in use shall be displayed on a symbol as shown in Figure 6.6.3.3.1 or Figure 6.6.3.3.2. The symbol shall be durable and clearly visible.

Figure 6.6.3.3.1



Large packagings capable of being stacked

Figure 6.6.3.3.2



Large packagings NOT capable of being stacked

The minimum dimensions shall be 100 mm x 100 mm. The letters and numbers indicating the mass shall be at least 12 mm high. The area within the printer's marks indicated by the dimensional arrows shall be square. Where dimensions are not specified, all features shall be in approximate proportion to those shown. The mass marked above the symbol shall not exceed the load imposed during the design type test (see 6.6.5.3.3.4) divided by 1.8.".

6.6.5.1.9 Insert the following new paragraph to read as follows:

"6.6.5.1.9 *Large salvage packagings*

Large salvage packagings shall be tested and marked in accordance with the provisions applicable to packing group II large packagings intended for the carriage of solids or inner packagings, except as follows:

(a) The test substance used in performing the tests shall be water, and the large salvage packagings shall be filled to not less than 98% of their maximum capacity. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass so long as they are placed so that the test results are not affected. Alternatively, in performing the drop test, the drop height may be varied in accordance with 6.6.5.3.4.4.2 (b);

(b) Large salvage packagings shall, in addition, have been successfully subjected to the leakproofness test at 30 kPa, with the results of this test reflected in the test report required by 6.6.5.4; and

(c) Large salvage packagings shall be marked with the letter "T" as described in 6.6.2.2.".

Chapter 6.7

6.7.2.2.9 Insert a new paragraph to read as follows:

"6.7.2.2.9.1 For portable tanks that are intended for use offshore, the dynamic stresses imposed by handling in open seas shall be taken into account.".

6.7.2.2 Insert a new paragraph to read as follows:

"6.7.2.2.17 Thermal insulation directly in contact with the shell intended for substances carried at elevated temperature shall have an ignition temperature at least 50 °C higher than the maximum design temperature of the tank.".

6.7.2.5 Insert the following new paragraphs to read as follows:

"6.7.2.5.12 The heating system shall be designed or controlled so that a substance cannot reach a temperature at which the pressure in the tank exceeds its MAWP or causes other hazards (e.g. dangerous thermal decomposition).

6.7.2.5.13 The heating system shall be designed or controlled so that power for internal heating elements shall not be available unless the heating elements are completely submerged. The temperature at the surface of the heating elements for internal heating equipment, or the temperature at the shell for external heating equipment shall, in no case, exceed 80% of the autoignition temperature (in °C) of the substance carried.

6.7.2.5.14 If an electrical heating system is installed inside the tank, it shall be equipped with an earth leakage circuit breaker with a releasing current of less than 100 mA.

6.7.2.5.15 Electrical switch cabinets mounted to tanks shall not have a direct connection to the tank interior and shall provide protection of at least the equivalent of type IP56 according to IEC 144 or IEC 529.".

6.7.2.19.4 Insert the following new second sentence:

"For tanks only used for the carriage of solid substances, other than toxic or corrosive substances that do not liquefy during carriage, the hydraulic pressure test may be replaced by a suitable pressure test at 1.5 times the MAWP, subject to competent authority approval.".

6.7.2.20.2, 6.7.3.16.2 and 6.7.5.13.2 Replace "shall be marked" by "shall be durably marked".

6.7.4.6.1 In the second sentence replace "fully open a pressure" by "fully open at a pressure".

6.7.5.2.4 (a) Replace "ISO 11114-1:1997" by "ISO 11114-1:2012".

Chapter 6.8

The existing NOTE under the heading of Chapter 6.8 becomes NOTE 1. Add a new NOTE 2 to read as follows:

"***NOTE 2:*** *For fixed tanks (tank-vehicles) and demountable tanks with additive devices, see special provision 664 of Chapter 3.3.*".

6.8.2.2.3 At the end of the second paragraph, replace "or the shell of the tank shall be capable of withstanding, without leakage, an explosion resulting from the passage of the flame" by "or the shell of the tank shall be explosion pressure shock resistant, which means being capable of withstanding without leakage, but allowing deformation, an explosion resulting from the passage of the flame".

6.8.2.6.1, 6.8.2.6.2 and 6.8.3.6 Before the Table, insert the following sentence: "The scope of application of each standard is defined in the scope clause of the standard unless otherwise specified in the Table below.".

6.8.2.6.1 In the table, under "*For tanks for gases of Class 2*", add the following new standard to read as follows:

(1)	(2)	(3)	(4)	(5)
EN 14129:2014	LPG Equipment and accessories – Pressure relief valves for LPG pressure vessels	6.8.2.1.1 and 6.8.3.2.9	Until further notice	

6.8.2.6.1 In the table, under "*For tanks intended for the carriage of liquid petroleum products and other dangerous substances of Class 3 which have a vapour pressure not exceeding 110 kPa at 50 °C and petrol, and which have no toxic or corrosive subsidiary hazard*", add the following new standard to read as follows:

(1)	(2)	(3)	(4)	(5)
EN 16257:2012	Tanks for the transport of dangerous goods — Service equipment — Footvalve sizes other than 100 mm dia (nom)	6.8.2.2.1 and 6.8.2.2.2	Until further notice	

6.8.4, special provisions TA4 and TT9 Replace "EN ISO/IEC 17020:2004" by "EN ISO/IEC 17020:2012 (except clause 8.1.3)".

6.8.4 (d), special provision TT 8 Replace "EN 473" by "EN ISO 9712:2012".

Chapter 6.9

6.9.2.3.2 and 6.9.4.2.1 Replace "ISO 75-1:1993" by "EN ISO 75-1:2013".

6.9.2.5 Replace "EN 61:1977" by "EN ISO 527-4:1997 and EN ISO 527-5:2009".

6.9.2.10 Replace "EN ISO 14125:1998" by "EN ISO 14125:1998 + AC:2002 + A1:2011".

6.9.4.2.1 and 6.9.4.2.2 Replace "EN ISO 527-5:1997" by "EN ISO 527-4:1997 or EN ISO 527-5:2009".

6.9.4.2.2 Replace "ISO 14125:1998" by "EN ISO 14125:1998 + AC:2002 + A1:2011".

Chapter 6.10

6.10.3.8 (b) Replace "which may create sparks" by "which may provide a source of ignition". At the end, add ", or the tank shall be explosion pressure shock resistant, which means being capable of withstanding without leakage, but allowing deformation, an explosion resulting from the passage of the flame;".

Chapter 6.12

6.12.5 In the Note, replace "EN 13501-1:2002" by "EN 13501-1:2007 + A1:2009".

Chapter 7.3

7.3.1.1 (a) Insert "or a reference to a specific paragraph" after "identified by the code BK".

7.3.1.1 (b) Amend to read as follows:

"(b) a special provision, identified by the code "VC" or a reference to a specific paragraph, explicitly authorizing this mode of carriage is indicated in column (17) of Table A of Chapter 3.2 and the conditions of this special provision, together with any additional provision identified with the code(s) "AP", as laid down in 7.3.3 are satisfied in addition to those of this section.".

7.3.1.4 and 7.3.1.6 At the beginning, replace "Bulk solids" by "Substances".

7.3.2 In the title, delete the word "Additional".

7.3.2.1 Add the following new first sentence: "In addition to the general provisions of section 7.3.1, the provisions of this section are applicable.".

7.3.2.7 Replace "4.1.9.2.3" by "4.1.9.2.4".

7.3.2.9 Add the following new sub-section to read as follows:

"**7.3.2.9** ***Goods of Class 9***

7.3.2.9.1 For UN 3509, only closed bulk containers (code BK2) may be used. Bulk containers shall be made leak tight or fitted with a leak tight and puncture resistant sealed liner or bag, and shall have a means of retaining any free liquid that might escape during carriage, e.g. absorbent material. Packagings, discarded, empty, uncleaned with residues of Class 5.1 shall be carried in bulk containers which have been so constructed or adapted that the goods cannot come into contact with wood or any other combustible material.".

7.3.3 Amend to read as follows:

"**7.3.3 Provisions for carriage in bulk when the provisions of 7.3.1.1 (b) are applied**

7.3.3.1 In addition to the general provisions of section 7.3.1, the provisions of this section are applicable, when they are shown under an entry in column (17) of Table A of Chapter 3.2. Sheeted or closed vehicles or sheeted or closed containers used under this section need not be in conformity with the requirements of Chapter 6.11. The codes VC1, VC2 and VC3 in column (17) of Table A of Chapter 3.2 have the following meanings:

VC1 Carriage in bulk in sheeted vehicles, sheeted containers or sheeted bulk containers is permitted;

VC2 Carriage in bulk in closed vehicles, closed containers or closed bulk containers is permitted;

VC3 Carriage in bulk is permitted in specially equipped vehicles or containers in accordance with standards specified by the competent authority of the country of origin. If the country of origin is not a Contracting Party to ADR, the conditions laid down shall be recognized by the competent authority of the first country Contracting Party to ADR reached by the consignment.

7.3.3.2 When the VC bulk codes are used, the following additional provisions shown in column (17) of Table A of Chapter 3.2 shall apply:

7.3.3.2.1 *Goods of Class 4.1*

AP1 Vehicles and containers shall have a metal body and where fitted the sheet shall be non-combustible.

AP2 Closed vehicles and closed containers shall have adequate ventilation.

7.3.3.2.2 *Goods of Class 4.2*

AP1 Vehicles and containers shall have a metal body and where fitted the sheet shall be non-combustible.

7.3.3.2.3 *Goods of Class 4.3*

AP3 Sheeted vehicles and sheeted containers shall be used only when the substance is in pieces (not in powder, granular, dust or ashes form).

AP4 Closed vehicles and closed containers shall be equipped with hermetically closed openings used for loading and unloading to prevent the exit of gas and exclude the ingress of moisture.

AP5 The cargo doors of the closed vehicles or closed containers shall be marked with the following in letters not less than 25 mm high:

"WARNING
NO VENTILATION
OPEN WITH CAUTION"

This shall be in a language considered appropriate by the consignor.

7.3.3.2.4 *Goods of Class 5.1*

AP6 If the vehicle or container is made of wood or other combustible material, an impermeable surfacing resistant to combustion or a coating of sodium silicate or similar substance shall be provided. Sheeting shall also be impermeable and non-combustible.

AP7 Carriage in bulk shall only be as a full load.

7.3.3.2.5 *Goods of Class 6.1*

AP7 Carriage in bulk shall only be as a full load.

7.3.3.2.6 *Goods of Class 8*

AP7 Carriage in bulk shall only be as a full load.

AP8 The design of the load compartment of vehicles or containers shall take account of any residual currents and impacts from the batteries.

The load compartments of vehicles or containers shall be of steel resistant to the corrosive substances contained in the batteries. Less resistant steels may be used when there is a sufficiently great wall thickness or a plastics lining/layer resistant to the corrosive substances.

NOTE: *Steel exhibiting a maximum rate of progressive reduction of 0.1 mm per year under the effects of the corrosive substances may be considered as resistant.*

The load compartments of vehicles or containers shall not be loaded above the top of their walls.

Carriage is also permitted in small plastics containers which shall be capable of withstanding, when fully loaded, a drop from a height of 0.8 m onto a hard surface at -18 °C, without breakage.

7.3.3.2.7 *Goods of Class 9*

AP2 Closed vehicles and closed containers shall have adequate ventilation.

AP9 Carriage in bulk is permitted for solids (substances or mixtures, such as preparations or wastes) containing on average not more than 1 000 mg/kg of substance to which this UN number is assigned. At no point of the load shall the concentration of this substance or these substances be higher than 10 000 mg/kg.

AP10 Vehicles and containers shall be made leak tight or fitted with a leak tight and puncture resistant sealed liner or bag, and shall have a means of retaining any free liquid that might escape during carriage, e.g. absorbent material. Packagings, discarded, empty, uncleaned with residues of Class 5.1 shall be carried in vehicles and containers which have been so constructed or adapted that the goods cannot come into contact with wood or any other combustible material.".

Chapter 7.5

7.5.2.1 Amend Note c after the Table to read:

"c *Mixed loading permitted between safety devices, pyrotechnic of Division 1.4, compatibility group G, (UN No. 0503) and safety devices, electrically initiated of Class 9 (UN No. 3268).*".

7.5.11 CV33 (1.1) In (b) delete "the critical group of".

7.5.11 CV33 (3.2) Replace "approval certificate" by "certificate of approval".

7.5.11 CV33 (4) Amend the heading to read as follows: "Additional requirements relating to carriage and storage in transit of fissile material".

7.5.11 CV33 (4) Insert a new (4.3) to read as follows:

"(4.3) Fissile material meeting one of the provisions (a) to (f) of 2.2.7.2.3.5 shall meet the following requirements:

(a) Only one of the provisions (a) to (f) of 2.2.7.2.3.5 is allowed per consignment;

(b) Only one approved fissile material in packages classified in accordance with 2.2.7.2.3.5 (f) is allowed per consignment unless multiple materials are authorized in the certificate of approval;

(c) Fissile material in packages classified in accordance with 2.2.7.2.3.5 (c) shall be carried in a consignment with no more than 45 g of fissile nuclides;

(d) Fissile material in packages classified in accordance with 2.2.7.2.3.5 (d) shall be carried in a consignment with no more than 15 g of fissile nuclides;

(e) Unpackaged or packaged fissile material classified in accordance with 2.2.7.2.3.5 (e) shall be carried under exclusive use on a vehicle with no more than 45 g of fissile nuclides.".

7.5.11 CV33 (5.4) Amend the end of the paragraph to read as follows:

"... and shall not be re-used unless the following conditions are fulfilled:

(a) the non-fixed contamination shall not exceed the limits specified in 4.1.9.1.2;

(b) the radiation level resulting from the fixed contamination shall not exceed 5 μSv/h at the surface.".

Chapter 8.1

8.1.4.1, footnote 1 Replace "EN 2:1992" by "EN 2:1992 + A1:2004".

8.1.4.4 Amend to read as follows:

"8.1.4.4 The portable fire extinguishers conforming to the provisions of 8.1.4.1 or 8.1.4.2 shall be fitted with a seal which allows verifying that they have not been used.

The fire extinguishers shall be subjected to inspections in accordance with authorized national standards in order to guarantee their functional safety. They shall bear a mark of compliance with a standard recognized by a competent authority and a marking indicating the date (month, year) of the next inspection or of the maximum permissible period of use, as applicable.".

8.1.4.5 Add a new last sentence to read as follows: "During carriage, the date required in 8.1.4.4 shall not have expired.".

8.1.5.2 Replace "EN 471" by "EN 471:2003 + A1:2007".

Chapter 8.2

8.2.1.2 Amend the last sentence to read as follows:

"These restricted basic training courses shall not confer the right to attend the training courses referred to in 8.2.1.4.".

8.2.1.3 Amend the last sentence to read as follows:

"These restricted tank specialization training courses shall not confer the right to attend the training courses referred to in 8.2.1.4.".

8.2.1.4 Amend to read as follows:

"8.2.1.4 Drivers of vehicles carrying dangerous goods of Class 1, other than substances and articles of Division 1.4, compatibility group S, or Class 7 shall attend specialization training courses covering at least the subjects defined in 8.2.2.3.4 or 8.2.2.3.5, as applicable.".

8.2.2.8.6 Add a new paragraph to read as follows:

"8.2.2.8.6 Contracting Parties shall provide the UNECE secretariat with an example of the national model for any certificate intended for issue in accordance with this section, along with examples of models for certificates which are still valid. A Contracting Party may additionally provide explanatory notes. The UNECE secretariat shall make the information received available to all Contracting Parties.".

Chapter 8.5

8.5, special provision S1 (4) (d) Add the following new sentence at the end: "This distance shall not apply to vehicles belonging to the same transport unit.".

8.5, special provision S12 Amend to read as follows:

"S12 If the total number of packages containing radioactive material carried in the transport unit does not exceed 10, the sum of the transport indexes does not exceed 3 and there are no subsidiary risks, the requirements in 8.2.1 concerning the training of drivers need not be applied. However, drivers shall then receive appropriate training in the requirements governing the carriage of radioactive material, commensurate with their duties. This training shall provide them with an awareness of the radiation hazards involved in the carriage of radioactive material. Such awareness training shall be confirmed by a certificate provided by their employer. See also 8.2.3.".

8.5, special provision S13 Delete S13 and insert "S13 *(Deleted)*".

Chapter 9.1

9.1.1.2 In the definition of "*FL vehicles*", in (a), replace "EN 590:2004" by "EN 590:2009 + A1:2010" (twice).

Chapter 9.2

9.2.2.5.1 (a) Delete footnote 2 and renumber accordingly the footnotes in Chapter 9.2.

9.2.2.6.2 In the English text, replace "Lamp bulbs" by "Lamps".

9.2.2.6.3 Insert "ISO 25981:2008[2]," before "ISO 12098:2004".

Chapter 9.3

9.3.4.2 Replace "EN 13501-1:2002" by "EN 13501-1:2007 + A1:2009".

Chapter 9.7

9.7.8.1 Amend the first sentence to read as follows:

"9.7.8.1 The electrical installation on FL vehicles shall meet the relevant requirements of 9.2.2.2, 9.2.2.3, 9.2.2.4, 9.2.2.5.1 and 9.2.2.6.".

9.7.8.2 and 9.7.8.3 Delete footnote 2.